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The *Railway Age* often has pointed out that the application of radical policies to the railways was sure to be followed

Government Ownership of Coal Mines

by the advocacy of radical policies in other fields of industry. The Plumb plan provides for government ownership and employees' management of the railroads. The coal miners have not waited for the adoption of the Plumb plan to begin an agitation for the application of a similar policy to the coal mines. The United Mine Workers of America has commenced a propaganda for nationalization of the coal mines and participation of the employees in their management. It also has decided to demand a 30-hour week and a large advance in wages. The railways are the largest purchasers of coal, and their owners and officers are interested in the new program of the miners because of the very large increase in railroad expenses which its adoption would cause. But the demands the miners have decided to make have a much broader significance. They are a striking illustration, in addition to many others the country recently has been afforded, of the extent to which radical counsels are coming to prevail in organized labor. We now have both the labor brotherhoods and the United Mine Workers engaged in propaganda for the acquisition of the industries in which they are employed at the expense of the general public and their management partly or wholly by the employees. The adoption of such plans would result in the overthrow of existing American industrial and political institutions, and evidently the support of many large labor organizations is being won for plans which their leaders know would involve an industrial and political revolution. It is daily becoming clearer that we have entered a great struggle between those who wish to preserve the existing institutions of America and those who wish to establish socialism and sovietism in their place. The first great fight will be over the future ownership and management of the railways. If private ownership and management wins in this field it will probably win in others. If private property in railroads is destroyed private ownership of other kinds of property also probably will be destroyed. The issue is clear-cut, and we have no doubt as to the side on which a great majority of the people finally will array themselves.

A superintendent manages the work of his division through three principal assistants, the engineer, the master mechanic

A Superintendent's Nights and Days

and the trainmaster. Which of the three is the most important is not a practical question, for each one is absolutely essential; but which of the three should engage the most of the superintendent's time and attention is a question which all competent observers will in most cases answer alike; it is the trainmaster. Director General Hines has sent out a letter intimating that operating officers are not giving sufficient attention to roadway

and mechanics, particularly roadway, which evidently has enlivened a good many staff meetings; and some of these officers have a feeling that they are being unfairly criticised. This feeling would seem to be due to abnormal sensitiveness. If the roadway of a division is neglected the division engineer is the man immediately responsible. It may be that the division superintendent, rather than the chief engineer or the general manager, was responsible for the selection of the division engineer, but this is not usually the case. A chief in Washington must, indeed, work through the chief division officer to find out what is going on from day to day on the division, but the latter ought not to need a great deal of time to fix the manager's attention on the essential issues. The reasons why the superintendent must live with the trainmaster more than with the other two are to be found in the nature of the case. The trainmaster may be likened to the stage manager of a theatre; the division engineer to the painter of the scenery. While the show is going on—which, on a railroad, means all of the time—the stage manager's office is the critical place. Or, to adopt a simile used by George M. Basford in one of his addresses, we may compare the superintendent to the conductor of an orchestra; he must concentrate attention on the players, not on the men who made the instruments. Again, the science of keeping up track and that of maintaining locomotives are comparatively settled; the young officer has, or should have, a good mental equipment of clearly defined principles; whereas the trainmaster must learn efficiency from a multitude of teachers. Much of his knowledge must come from experience; he cannot get it from books or at school. Even at his best he, much oftener than the other two, has problems which he cannot settle; and the man who (having been duly diligent) has the largest number of unsolved puzzles, is the one who is entitled to the first call on the superior's time and attention.

The Annual Convention of the Signal Division

THE FIRST ANNUAL CONVENTION of the Signal division of the American Railroad Association, which was held in Chicago on September 17-19, resembled previous conventions of the old Railway Signal Association in that there appeared to be a determination to forward constructive measures that will conform to or improve upon the best present practice.

During the past few years the annual convention of the Railway Signal Association has been held in September. It is now recommended that the annual meeting be held in July in order that the executive committee of the American Railroad Association can dispose of each year's work of all its sections and divisions at its annual convention, which is to be held each year in November. Such an arrangement would necessarily require a change in the time of holding at least one of the two stated meetings of the Signal division. These stated meetings have heretofore been held in March and June, and it is proposed now to hold them in March and December. It is probable that some objections may be raised to July as the annual convention month. In normal times that is a busy time for the signal department. Construction work, seasonal repairs, and inspections are usually going at full speed. Then, also, July is about the middle of the vacation period, when the department is short handed. Under such circumstances, it may mean that some roads cannot send representatives to the annual convention. Besides, passenger business is especially heavy at that time of the year. So far as the stated meetings are concerned, there probably can be no objection to holding one in March, since has always at least one day been set aside during that month for one of the stated meetings. December,

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however, may prove to be a poor time to hold such a meeting. At that time of the year, at least in some parts of the country, storms are prevalent and it may, therefore, be out of the question for some members to attend. There is one feature, however, that may relieve the situation somewhat, and that is that at any meeting, committee reports may be submitted to the members for action by letter ballot.

The subject of automatic train control was brought up again by Committee 10—Signaling Practice, in the form of recommended requisites for the design and construction of such devices. It is the opinion of some of those who have made a detailed study of train control devices that the time has come when service tests should be made on a larger scale and that the railroads should lend all the assistance practicable to those who are conscientiously engaged in the development of such devices.

Another problem confronting the association is illustrated by a remark made during the meeting that only five per cent of the total signal business of one signal supply company conformed to Railway Signal Association standards. This might at first seem surprising; for it would appear that the railroads should use material approved by the Railway Signal Association and the Signal division of the American Railroad Association. It would seem that, inasmuch as a great deal of time and much conscientious constructive work have been devoted to the development of standard materials, the amounts of such materials used by the railroads should represent more than five per cent of the total signal supplies purchased. It is true, however, that the Railway Signal Association has not yet prepared standards for all signal materials, but it is certain that they have been prepared for more than five per cent of such materials. It is understood that when the executive committee of the American Railroad Association approves the work of any section or division of the association and it is also approved by the Railroad Administration, the use of such materials or specifications becomes mandatory. In such a case it might be possible for the executive committee of the American Railroad Association and the Railroad Administration to approve many of the standards already adopted by the Railway Signal Association, in which case the total signal business of a signal material manufacturer would soon show a much larger percentage of R. S. A. standard supplies than indicated by the statement referred to.

The Plight of a Short Line Railroad

ONE OF THE WITNESSES on Monday before the House committee on interstate commerce is the builder and owner of an 88-mile railroad running out of Savannah, Ga. George M. Brinson appeared before the committee and testified that he had put over \$700,000 of his own money into his road, the Midland, which runs back from Savannah through a timber and agricultural country, crossing two or three other railroads and running through no large towns excepting Statesboro. Not only had Mr. Brinson built the road largely with his own money, but he was president and, as he remarked in answer to a question of one of the committee, was about all the officers there were. He had previously built other small roads in the south and had made a fair amount of money out of them. The Midland runs through what Mr. Brinson characterized as the richest county in Georgia. Building the road afforded transportation facilities to villages and rural communities heretofore without a railroad outlet. The road had been in operation only a very few years when the United States went into the war.

Mr. Brinson testified that the road cost about \$1,200,000, which presumably included equipment. There are outstanding \$360,000 of bonds which are now in default of interest. The bonds are held by quite a number of different people and

as yet no foreclosure suit has been begun. Mr. Brinson, because there seemed no better way out of a hopeless position, signed one of the standard short line contracts with the government, but what he had to tell the committee was in substance that he could not go on operating the road under present conditions and make it pay even its expenses and the interest on the bonds, disregarding any return on his own investment of \$700,000. Neither did he think any one else could take the road and operate it in such a way as to pay expenses and interest on the bonds even if his own interests were wiped out completely. The bonds are only at the rate of \$4,000 a mile.

Is this a plain case of a man making a bad business venture and now coming before Congress and asking to be helped out? It is not; if Mr. Brinson's testimony may be taken at its face value, and the testimony was remarkably convincing and apparently made a considerable impression on the members of the House committee. In Mr. Brinson's opinion, this was a clear case where the government through its action, necessary as that action might be to meet war conditions, had wiped out his investment of \$700,000 and had created conditions which made the many other short lines situated somewhat as the Midland is, unprofitable, if not actually a source of expense instead of revenue to their owners.

The owner of this little road, since the roadbed was entirely unseasoned, had bought five old, "rattle-trap"—the word is his—locomotives, with the intention of running them until the roadbed had been seasoned enough to justify putting on heavy new locomotives. The Midland did not have cars enough of its own to do its local business, but, as Mr. Brinson expressed it, it was a family affair between him and his connections; he could give them traffic and they were willing to let him use their cars. But government operation changed all that.

Fully as disastrous, however, to the Midland and like-situated roads, in Mr. Brinson's opinion, as the shutting off of car supply after the government took over its trunk line connections and the routing of freight by a government line rather than over an independent line, was the situation created by the government's railroad labor policy. Before government control a short line such as the Midland could hire men through individual bargaining with them, could, in effect, make a strictly local, rural industry of operating a local line through an agricultural country. Now, Mr. Brinson testified, his local labor demanded the same rate of wages as the government was paying. He could no longer get a boilermaker to speed up when one of the "rattle-traps" broke down. Now this boilermaker must have not only the same wages, but the same restricted output as the boilermaker on the Central of Georgia, United States Railroad Administration.

We see in this testimony of Mr. Brinson some confusion of economic causes which might have been effective whether or not the government had taken over the operation of the trunk lines and causes which are directly traceable to the policy of former Director General McAdoo, but the one thing that stands out clear and seemingly irrefutable and the thing that visibly impressed the House committee was the fact that unless the American people are willing to forego expansion of railroad facilities through the building of such roads as this independent 88-mile line, some specific provisions will have to be made in the bill for the reorganization of the American railroad systems for the encouragement of the short line railroad builder. Mr. Brinson thought that the Cummins bill, if he understood it correctly, would possibly help him out of some of his difficulties, but he did not go so far as to express the opinion that it would encourage other optimistic would-be railroad builders to put \$700,000 into a new railroad anywhere in the south.

It is true that the aggregate mileage of all the short lines is not large when compared with even a few of the largest

systems, but the short lines play a part in the economic life of the country that should not be overlooked, and while the short line problem is a small one compared to the great problems which face Congress in regard to the American transportation question as a whole, it is one that deserves study and, it would appear, has the sympathetic interest of Congress.

What Is a Strike?

THE PROVISIONS in the Cummins bill designed to bring about the settlement of labor controversies by an impartial tribunal instead of by the use of, or, more frequently, by the threat of force, and to prohibit "any combination or agreement with the intent *substantially* to hinder, restrain or prevent the movement of commodities or persons in interstate commerce," has called forth a lot of impassioned rhetoric about interference with the inalienable right of a free-born American citizen, or of two such citizens, to quit his or their employment peaceably, when they have regretfully arrived at the conclusion that they can no longer maintain or improve the "American standard of living" on the wages offered them. This notwithstanding the fact that the bill says specifically that "nothing herein shall be taken to deny to any individual the right to quit his employment for any reason."

The constant repetition of the presumption that a strike consists of a peaceful folding of the hands or that it is properly described by the euphemistic language used by Mr. Plumb recently when he said that men would "cease to serve" is becoming tiresome. It is true that we have no basis in experience for a proper conception of the kind of nationwide strike that has been occasionally threatened by the train service brotherhoods and other large organizations of railroad employees but we have had plenty of experience of the kind of strikes that includes such practices as throwing emery dust into machinery, soap into locomotive boilers and bricks at the heads of men who are not only willing but anxious to take the places of the strikers and to try to maintain a standard of living on the wages that they scorn and by hours of labor that they find irksome.

We have also had recent experience of the fact that a strike does not necessarily mean a termination of employment, because when Mr. Hines announced that such an interpretation would be placed upon the action of the Pacific coast train employees and of the shop men on a number of eastern roads if they failed to report for work by a specified time the men returned to their jobs.

It even seems somewhat problematical whether the provisions of the Cummins bill would apply to the individual employees under the present form of strike ballot on which an employee signs his name to an authorization to the officers of the union to "use the protective features of the organization if necessary," knowing that if he does not so sign his name will be recorded in a little notebook carried by the walking delegate for future reference. It would seem that the conspiracy in such cases would be on the part of the labor leaders. The latter like to have it appear that they are "sitting on the lid," in anxious endeavor to restrain their restive followers from a too rash eagerness to burst the bonds of serfdom, but their bluffs have been so successful in the past that it is a little difficult to predict with assurance what would be the result if they were brought to a showdown.

There are ways to find out, however. One way would be to force the labor leaders to play their strike card and show to what extent their claims represent the real feeling of the men. This might also tend to show how many of the easier jobs at higher pay which the labor organizations point out in their arguments they might be able to fill. For example, the shop employees last year got a raise on the ground that

it was necessary to keep them from migrating to the shipyards, but although they were allowed less than the shipyard scale, the increase in wages for the shopmen was followed by a large increase in the number of them applying for railroad service. The mere taking of a strike vote is so easy and usually has been so successful, and the methods of labor organizations include so many ways of making it unpleasant for a man to vote against a strike, that it is time to find out what a strike vote means.

Another way would be to enact into law some such provision as that contained in the Cummins bill and let a class of employees submit its grievances to arbitration by a board on which they would have equal representation. Then if the board should award them, say, only 25 per cent instead of 50 per cent and the men should still feel so dissatisfied and so disgusted with their employment that they would feel justified in "ceasing to serve" we imagine that the law could be repealed before enough new jails could be built in which to house the martyrs, because the jails now in existence might be needed for the leaders, whose interest in their own jobs is causing most of the trouble. If, on the other hand, a large percentage of the men should even grudgingly accept such a trifling increase in their emolument until they could think up a new excuse for reopening the case, or if the peaceable strikers motoring homeward to await their summons to court should find their passage obstructed by the pedestrians in search of employment, they might be led to join with the public in a conclusion that the law was a good one.

Public Sentiment and the Steel Strike

E. H. GARY, chairman of the United States Steel Corporation, has declined on behalf of the corporation to deal with organized labor, and the long-threatened great strike in the steel mills has begun, in spite of the plea of President Wilson that it should be postponed until after the industrial conference which he has called.

There is a circumstance relative to the attitude of the Steel Corporation which is highly significant. Although its refusal to recognize or deal with organized labor has resulted in a great strike, its course has received little criticism from the press, except the labor and socialist papers; and the sentiment of the public seems to be in its favor. If the Steel Corporation had assumed a few years ago the same attitude it would have been criticised by a large part of the press, and public sentiment would have been against it.

One of the reasons why, in this crisis, the Steel Corporation has fewer critics and enemies than it would have had a few years ago is that it has voluntarily given its employees large advances in wages and the opportunity to acquire its stock and share in its profits. Another is that it promptly and patriotically placed all of its vast resources at the disposal of the government during the war. There is another reason, however, which probably is much more important and influential. This is the tendencies which large labor organizations recently have been manifesting.

Until some years ago employers generally held the whip hand in dealing with their employees. The public knew this resulted in much injustice and not a little oppression and accepted the view that labor must be organized to secure its rights and protect its interests, and that employers should recognize organized labor. Until recently the public has looked with sympathy and approval upon the increase in the number of labor organizations and the growth of their memberships. A great impetus to the growth of the labor organizations was given during the war by the government's attitude of friendliness to them.

But simultaneously with the recent acceleration of the

growth of labor unions there has been occurring a change in the purposes which many of them avow and in the methods they use. When labor organizations were weak they demanded that employers should submit controversies with them to arbitration. Recently, however, there has been a growing tendency on the part of strong unions to decline arbitration, and to insist that all their demands must be granted under penalty of a strike. The first conspicuous illustration of this change in the attitude was afforded in the controversy regarding the basic eight-hour day on railroads in 1916, which resulted in an order for a general railroad strike and the hasty enactment of the Adamson law. Formerly the labor unions confined themselves to seeking better working conditions, shorter hours and higher wages for their members. Recently their demands in respect to working conditions and hours have been rapidly growing more extreme until finally the coal miners have asked a 30-hour week accompanied by a large increase in wages; but the unions are no longer confining their activities to such matters as working hours and wages. For years the socialists tried without success to secure control of the American Federation of Labor. Recently, however, large labor organizations affiliated with the Federation have begun to advocate measures which would be even worse than socialism. The railroad labor organizations are carrying on a propaganda for government ownership of the railroads and their management by the employees. The coal miners have begun a propaganda for government ownership of the coal mines and the division of their management between the government and the miners. Under these schemes, while the public is to buy the industries in question, it is not to be allowed, as it would be under socialism, to manage its own industries, but is to turn them over largely or wholly to the irresponsible management of the persons on the pay roll.

At the very time when big unions are demanding that the government shall nationalize vast properties and practically turn them over to the unions to manage, the unions have begun to lose control of their own members. The advocates and spokesmen of organized labor used to contend that collective bargaining between employers and employees was necessary to secure not only justice but continuous orderly operation of industries. Recently, however, the members of labor unions in all parts of the country have begun to strike in violation of their contracts with their employers and contrary to the orders of their own organizations. These "outlaw" strikes have even occurred in shipbuilding plants and on railroads which at the time were under the control or actual management of the government. These have been strikes against the government itself.

Developments such as those mentioned are making a very unfavorable impression upon all classes who do not belong to labor unions and even on many members of labor unions. When members of labor unions strike in violation of their contracts and contrary to the orders of their own officers, the question naturally is raised as to what good it does to carry on negotiations and make contracts with labor organizations. When they demand a 30-hour week, as the United Mine Workers are demanding, the question arises as to whether continued increase in the strength of labor unions will not result in a curtailment of the production of coal and of other commodities which will be destructive of the welfare of the working and all other classes. When labor unions commit themselves to such schemes as the Plumb Plan and nationalization of the coal mines, the question naturally arises as to whether the continued growth of unionism will not strengthen the movement for extreme radicalism and push the country finally into socialism or bolshevism. Many of the labor leaders disavow socialism; but socialism is merely the public ownership and *public management* of all the facilities of production, distribution and exchange, while

the present labor leaders seem disposed to force upon the country public ownership and *labor class* management of all large industries, which would be worse than socialism. The extreme demands which have been made, the "outlaw" strikes which have occurred and the radical measures which have been proposed have been supported by the spokesmen of labor in words which themselves have been alarming. They have used the familiar language of the socialist and the anarchist in denouncing property owners, and the word "revolution" frequently has been on their lips.

There undoubtedly is a connection between recent developments in the labor world and the attitude of the press and the public toward the controversy between the United States Steel Corporation and organized labor. The general press and public are inclined to think that the Steel Corporation in refusing to recognize organized labor may be fighting the public's battle. If the public believed that recognition by the Steel Corporation of organized labor was all that was involved its attitude might be different. But naturally the public is beginning to wonder whether the further recognition of organized labor by employers and its further growth in membership and power means that there are to be disastrous curtailments of production in the United States; that contracts made by organized labor are not to be observed by it; that organized labor is going to refuse to submit its demands to arbitration; and that it is going to become a giant agency for the promotion of socialism, or even bolshevism. The public naturally reasons that if these are to be the results of the development of labor organizations, their recognition by employers is not so desirable as it formerly seemed to be. Knowledge of the fact that John Fitzpatrick and W. Z. Foster, the principal leaders of organized labor in the steel strike, are extreme radicals, Foster being an avowed advocate of the overthrow of the present industrial system, and of the use of "direct action" to bring this about, is not adapted to make the public look with less suspicion and apprehension upon the steel strike.

Only time will tell what is to be the outcome of the strike. The patent fact, however, that the attitude of the general press and public is far less friendly to organized labor in this struggle than it would have been a few years ago may well cause the leaders and members of labor organizations to pause and reflect. The people of the United States are just as determined not to be ruled by an autocracy of the proletariat as they ever were not to be ruled by an autocracy of the plutocrats. A vast majority of them are not in favor of socialistic or bolshevistic measures, but believe in private ownership and individual initiative. A large part, and perhaps even a majority, of the members of labor organizations are not in sympathy with the extreme radicalism being manifested by their present leaders. In other words, while the tendency of the labor organizations is to become more radical, the general trend of American sentiment is conservative, and there is a growing belief among the people that the labor organizations are trying to use the power they believe they possess to exploit the general public. Many very strong men and organizations, just when they have thought their power had reached its maximum and was ready to be used with the maximum effect, have suddenly found themselves rendered powerless and even crushed by the overwhelming reaction of an aroused and exasperated public.

The proposed alliance between the railroad brotherhoods and the unions of coal miners is expected by the officers of the United Mine Workers to result in joint action in wage demands. A committee has been appointed by the United Mine Workers to meet a similar committee from the railroad brotherhoods on October 1, to prepare a plan of co-operation in presenting wage and working condition demands.

Letters to the Editor

National Department of Public Works Versus the Corps of Engineers, U. S. A.

CHICAGO.

TO THE EDITOR:

The United States Engineer Corps is a body of men justly proud of its record, but hostile to any movement which threatens its authority or reduces its field of action. It has on its roster the names of many men who deserve credit for high attainments. Their country had educated them and made them a class apart, invested with authority and clothed with dignity. They have been entrusted with vast responsibilities and for the most part have discharged those responsibilities worthily, but not without the advice and help of untitled civilian engineers, who have paid for their education and gotten their experience without the aid of a paternal Government. It is these men who have done the vast proportion of the work for which men who wear insignia of military rank have been accorded, and have graciously accepted, the credit.

A statement of the vast area of the field of operation of the Corps of Engineers is a fitting preface to what I am about to say. Continental United States has an area of 3,742,583 square miles, within which are 26,410 miles of navigable rivers, 1,200,000 square miles of arid lands, and 75,000 square miles of swamp lands. Our continental and insular coast line is 48,881 miles long, not including our water front on the Great Lakes. We have between 35 and 40 continental ports, besides all those in our insular possessions. There are 517 West Point engineers to care for this vast array of work, as shown by the "Statement showing rank, duties, and addresses of the officers of the Corps of Engineers," issued by the War Department on January 1, 1919. A large proportion of the 375 captains and lieutenants were rushed through West Point without completing the course of study. We have then, old and young, experienced, and novices, 517 officers to do the vast work suggested by the citation previously made.

There are in the United States over 100,000 engineers in the various lines coming within the term engineering. Thousands of these men responded to war's compelling need; the American Society of Civil Engineers supplied more than 1,500. The American Society of Mechanical Engineers sent 1,497. The American Institute of Mining Engineers, 739. The American Society of Electrical Engineers supplied 1,412. The American Society for Testing Materials supplied 575. The architects sent hundreds. These were not novices, but men who, when the need was presented, were able to meet it, and their record of achievement is a proud one. They know that they have earned recognition from the government. They are so self-respecting that they are not willing, now that the piping days of peace have returned, to do the planning and the work which must be done along their several lines, and submit their work to a military engineer who, as a matter of form, will attach his name to the plans and as a matter of course, accept the credit which goes with the work.

Military engineers are educated to meet the constructive and destructive needs of war, and war has demonstrated to the United States its need for them. They do not fit into the every day life of a democracy. Their training makes them autocratic. Most of them, however, have the instincts of gentlemen and they deport themselves as such, but the officer is a rare exception who can wholly divest himself of a superior attitude toward the civilian. The feeling may

be successfully camouflaged but it is only in concealment.

We think that no record will disclose a structure designed for the uses of peace and erected under military direction which has been designed, supervised, and completed wholly by the military engineer without aid or counsel from some civilian engineer. In support of this statement the Sault Ste. Marie locks and the Panama Canal are in evidence. Are not the skill and brains of Alfred Noble, Joseph Ripley, L. C. Sabin, David Molitor, Isaac De Young, and many other civilians built into the Sault structures? Then take the Panama Canal. It is to the glory of the Corps of Engineers, U. S. A., that they were in charge of that tremendous project, and the names of Goethals, Sibert, Gaillard and Hodges will always flash upon the screen of memory when that work is thought of, and they have had recognition and reward; but we who know, will also remember Williamson, Goldmark, Schildhaur, Cornish, Zinn, Nichols and their civil associates. Alfred Noble, too, left his impress upon that great work. The Pacific division had as its Chief, S. B. Williamson, civilian, all of whose aids were civilian engineers.

An examination of the Chief Engineer's report for 1913 (Vol. 6, Statement of Construction Expenditures to June 30, 1913) shows that the military on the Atlantic division built 2,265,415 cubic yards of masonry for \$16,993,254.33, or an average of \$7.50111 per cubic yard; and that the civilians on the Pacific division built 2,453,320 cubic yards for \$13,646,113.96, or an average of \$5.5627 per cubic yard; showing a civil economy of \$1.9384 per cubic yard over the cost of the Military division, or a saving of \$4,745,515.49 on the job. Did Williamson ever receive any recognition from Congress? He did receive it from a business organization to which his achievement recommended him. Did any one of his civil associates receive commendation or reward from Congress? If so, when, and what was it? And furthermore, we know that these engineer officers did not plan the Panama canal. The type and salient features of that canal were worked out by a minority of the International Commission for the Isthmian Canal. To the project thus prepared the army engineers fell heir,—a project changed, except as to dimensions, in only one particular. The lake which the minority planned on the Panama side of the Culebra cut, with dam across the Rio Grande and locks between Sosa and Ancon, was abandoned because locks in that location would be within range of gunfire from warships. The locks were moved back to Miraflores and a large item of cost was added to the work. The wisdom of this move from the military standpoint could not be questioned then, but the World War has shown such advance in the power of modern artillery, and indirect fire has reached such precision of aim that the interposition of a hill and the withdrawal for a few miles count for but little as a means of defense.

I have grown old in engineering service and I have been in touch with military engineers for 40 odd years. I have admired, valued and still value the friendship of many of them. But I have not learned to admire the system which environs them, and I believe that the injection of that system into the activities of our civil life is a harm so great that it needs to be abated, as it will be by the passage of the bills supported by the Engineers, Architects and Constructors Conference on National Public Works and introduced on June 25, in the Senate by Wesley L. Jones and in the House by Frank G. Reavis, and the 100,000 or more engineers of our country should use every honorable influence and means to secure that legislation.

ISHAM RANDOLPH,
Consulting Engineer.

Eight-Cent Street Car Fare in St. Louis.—The Public Service Commission of Missouri has authorized an increase in street car fares in St. Louis to 8 cents, the advance to continue for six months.

Raising a Large Train Shed Under Traffic

Lackawanna Lifts Entire Structure at Hoboken to Overcome Settlement and Restore Original Clearance



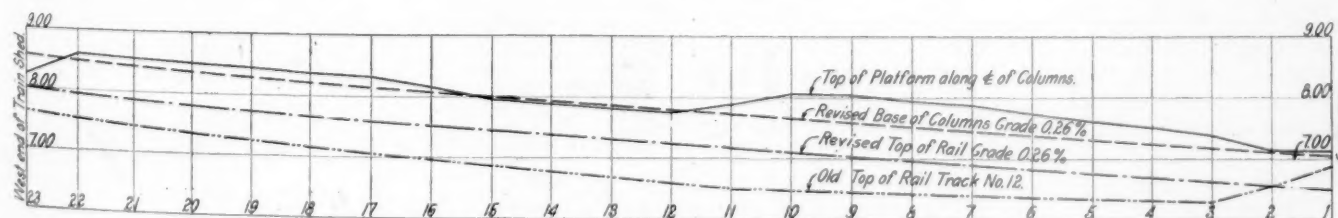
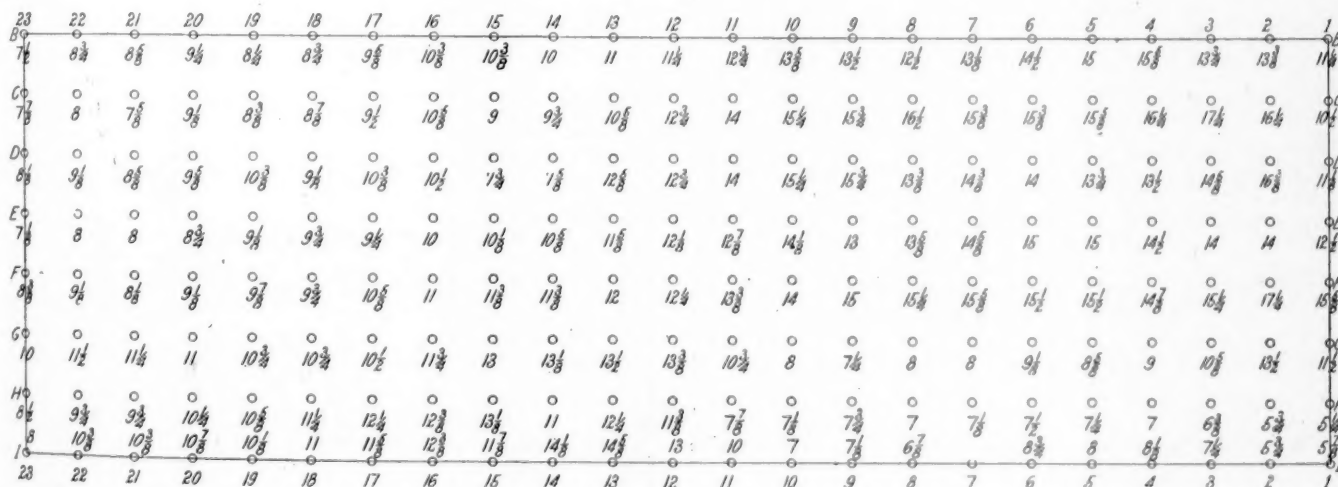
Looking Over the Train Shed Toward the Station

RAISING A TRAIN SHED having an area of approximately five acres and weighing about 18,000,000 lb., from 4 to 17 in. above the level to which many of its supporting columns had sunk, is the unusual engineering project which has just been completed by the Delaware, Lackawanna & Western at its Hoboken (N. J.) terminal.

\$250,000 and, in addition to raising the shed, includes the complete reconstruction of the skylighting facilities.

The Shed

The trainshed at Hoboken was erected in 1907. It is of the Bush type with columns set in rows along the center of



Plan of Shed Showing Amount of Raise. A Typical Profile

The work was done under the necessity of interfering as little as possible with the 1,500,000 passengers passing through the terminal each month and the operation of the 225 trains which arrive at and depart from the terminal daily. The project involves an expenditure of more than

each platform, supporting a series of arches which extend laterally from center to center of platforms. The roof of the shed is formed of reinforced concrete slabs resting on purlins which are 6 in. bulb angles. The concrete roof slabs are 2 in. thick, reinforced with expanded metal and

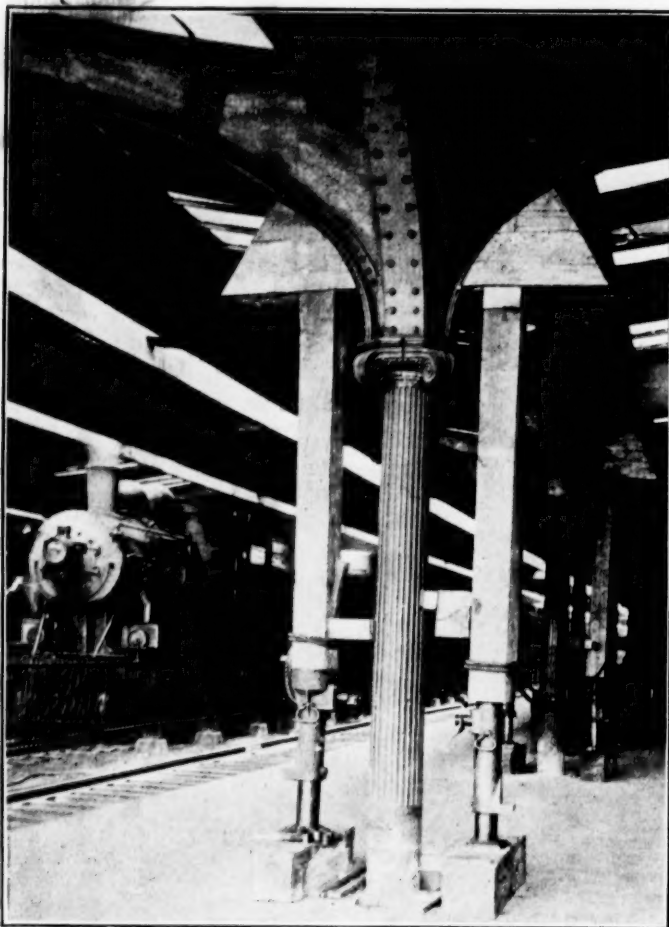
covered with a composition roofing. Smoke ducts are provided over the center of each track, and daylight is admitted to the shed through continuous skylights over each platform 7 ft. 10 in. in width of $\frac{3}{8}$ -in. wire glass.

The shed is 360 ft. wide by 630 ft. long. It covers 14 tracks and has an area of approximately five acres. It weighs approximately 18,000,000 lb. and is supported by 207 cast iron columns which rest on concrete foundations and which, in turn, are supported on wood piles averaging 80 ft. in length. The site is on made ground over the old bed of the Hudson river, and the supporting piles are driven into the mud underlying it.

Shortly after the completion of the shed settlement was noted in the pile foundations. The settlement was irregular in extent, ranging from a minimum of $5\frac{1}{4}$ in. to a maximum of $17\frac{1}{4}$ in. As a result of this subsidence it became neces-

ing columns were embedded in concrete foundations, and before lifting could be begun it was necessary to cut away this concrete from around the column bases.

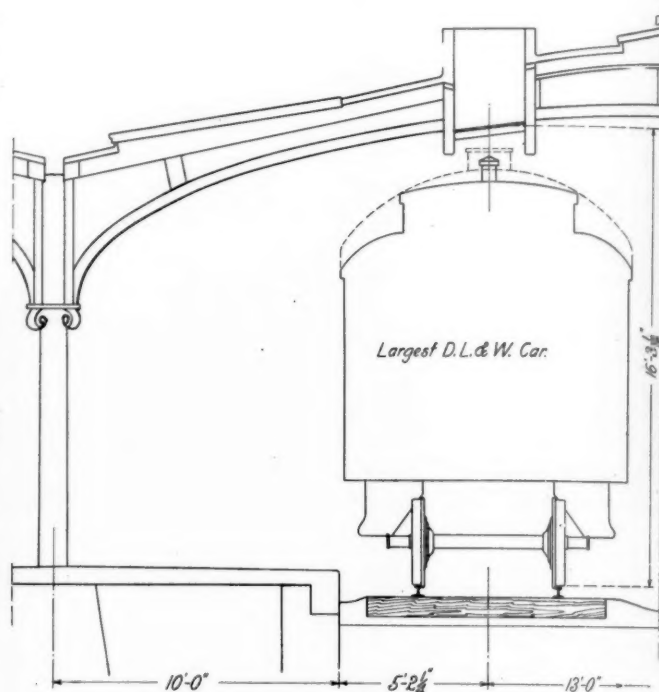
In planning the work it was decided to raise an entire section at one time, providing jacks at each column in a



A View of the Jacking Apparatus. The Extent of the Raise Is Indicated on the Column

sary to raise the tracks to a temporary grade, reducing the clearance under the roof from that originally provided, and the lifting of the shed was undertaken to restore ample clearance as well as to provide for the continually increasing size and height of motive power and equipment. The wire glass skylights originally provided had been found difficult to maintain in good repair owing to the vibration set up in the structure by trains and the exhaust from locomotives. Consequently, when it became necessary to raise the shed it was decided to replace the original skylights with others of the vault type.

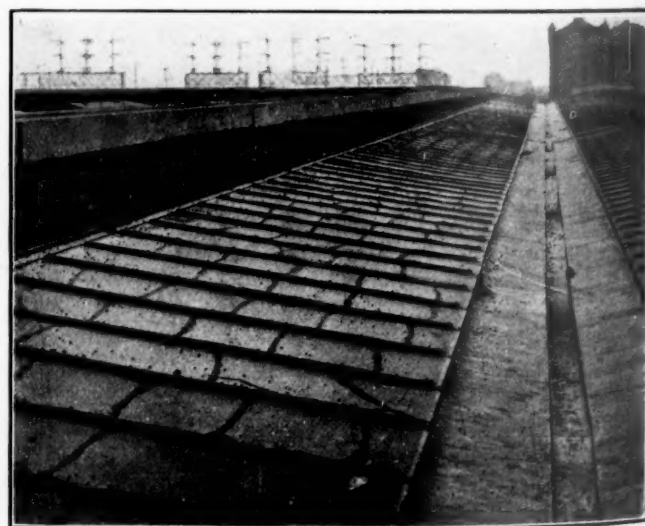
At the time of its erection four expansion joints were provided in the length of the shed, dividing it into five sections which were tied together with structural steel connection members. The roof was made weather tight by flashings of copper over the joints. As built, the bases of the support-



Clearance of Train Shed After Completion of Work

section. The first lifting operations were confined to the section adjoining the concourse after it had been cut free from the adjoining section. The connection members between the sections were cut by means of acetylene torches.

The lifting was accomplished by hand jacks resting on wooden blocks placed on the concrete platforms and jacking



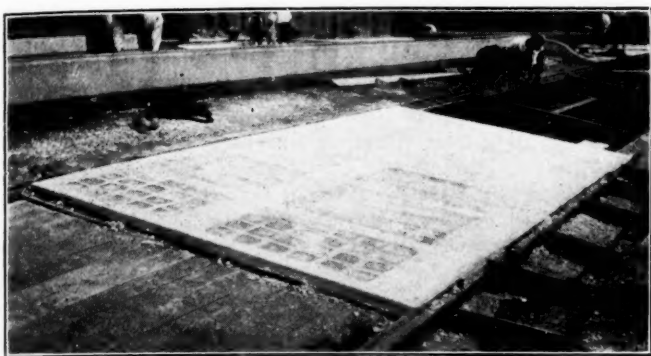
A View of the Old Type Skylights

shores working against blocks of wood, triangular in shape, firmly secured to the flanges forming the section of roof support next to the columns, by bolts passed through the rivet holes. The arrangement of the jacking apparatus is shown in one of the photographs, and with the jacks installed at all the columns the weight was first taken at the columns where the settlement was greatest. After this

all the jacks were started and the entire section brought up to the proper grade.

In the lifting of this section the jacks were supplemented by levers of 12-in. by 12-in. timbers mounted on the smoke ducts at the expansion joints, the ducts acting as fulcrums and furnishing the means for attaching the chains and hooks to the section to be lifted. On the opposite side of the joint the ducts acted as the resistance against which the levers worked through the blocks and falls.

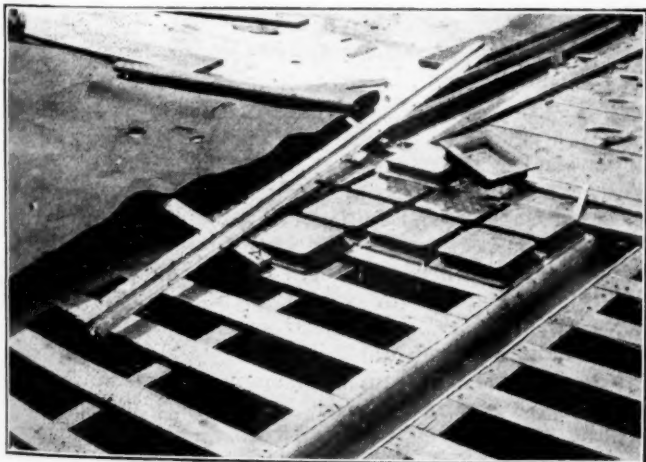
During the lifting of the first section the possibility



The Completed Roof in a Panel of the Train Shed Consists of Two Sections of Concrete Slab and One Section of Glass

of jacking continuously from one end of the structure to the other suggested itself, and on experiment was found to be practical. Consequently the remainder of the work was done in that manner, thus obviating the necessity and expense of cutting the expansion joints between sections and the use of levers.

The continuous jacking was begun by lifting the first line of columns in the second section approximately 2 in. in the first lift. This was followed by a similar lift of the No. 2



The Forms, the Glass and the Copper Expansion Joints

columns in the section after which a lift could be made either in the No. 1 or No. 3 columns, and so on to the end of the structure.

When the lifting was begun it was feared that the jacking operations might cause further settlement in the foundations, but this did not prove to be the case, and the raising progressed without any serious trouble. Owing to the settlement of the foundation, however, certain of the steel members had taken a permanent set, and in lifting the north line of columns where the settlement had been comparatively slight it was found that in raising the adjoining line of columns to the permanent level it was necessary to raise

the north line above the grade. On completion of the lifting these columns were jacked down to the proper grade with little trouble.

A force of approximately 20 men was employed in making the preparations for the jacking operations, this being increased to 40 men during the actual operation of the jacks. With all in readiness the work of lifting the first section was accomplished in one day. In lifting the shed the lift in many cases was sufficient to bring the column bases above the level of the platforms, which were then raised in accordance with the new grade of the shed.

The Skylights

Under the old skylighting arrangement $\frac{3}{8}$ -in. wire glass was used in both the trainshed and concourse roofs, the skylights in both cases being of the continuous type. In the trainshed a skylight was provided over each platform. Under the new plan the wire glass is replaced by skylights of the vault type furnished and erected by the Keppler Glass Constructions, Inc., of New York. In the roofs of both



A Concrete Curtain Wall on the North of the Shed Complicated the Jacking Operations

the concourse and the trainshed the area of glass will be reduced approximately 67 per cent, the photographs of the old and new conditions showing clearly the manner in which this reduction is accomplished. In a trainshed bay the new glass is installed in the center of the three panels and reinforced concrete slabs are inserted in the end panels. In the concourse roof the new skylights are continuous, the reduction in glass area being made in the transverse section, concrete slabs replacing every other row of the old skylights.

The new skylights are made up of vault lights 7-in. square supported by reinforced concrete beams, the reinforcement consisting of $\frac{1}{4}$ -in. steel rods placed between the rows of glass in both directions. In placing the glass, separators of cardboard strips are used which may be stripped out by hand from underneath the roof when the forms are taken down.

Throughout the roof, copper expansion joints, as shown in one of the photographs, are used every 9 ft. When placed the joints provide also for drainage, being made continuous in the concourse roof by means of lapping. In the skylights, themselves, each glass is free to expand and contract, each unit being given a coat of white along its corrugated edges

in order that there will be no interference with the light rays. Over this is placed a preparation of asphalt which permits expansion in each glass.

The concrete slabs are reinforced with expanded metal, the concrete mix being 1:2:4. The mix of the concrete surrounding the glass in the skylights is 1:2½. The concrete plant is located at the track level, all materials being brought in by train. The outfit consists of the mixer and an elevator. The materials are wheeled to the mixer which discharges into push buggies which are elevated to the roof where timber runways are provided.

The lifting of the shed was begun in June of this year and completed in August. It was done by company forces under the direction of L. L. Talynn, acting chief engineer of the Lackawanna; A. E. Deal, bridge engineer, and M. H. Doughty, division engineer.

Work is now under way on the new roof and skylights, and it is estimated that this portion of the project will be completed early in November.

Convention of the Associated Business Papers

THE FOURTEENTH ANNUAL CONVENTION of the Associated Business Papers, Inc., was held at the Congress hotel in Chicago on September 18, 19 and 20. This organization is composed of companies publishing over one hundred of the largest technical and trade papers in the United States.

In addition to transacting business affecting primarily the interests of the publications belonging to the Association, the convention heard addresses and adopted resolutions touching upon the present industrial unrest, the large reconstruction problems confronting the country, and took action intended to make the business press a potent factor in the education of public opinion regarding these matters.

Resolutions which were drafted by a committee headed by H. G. Lord, president of the Technical World Journal, of Boston and New York, called attention to the present labor unrest and current radical labor movements, and instructed the Executive Committee of the Association to take whatever steps were necessary to bring about such co-operation between the editorial departments of the different publications of the Association and between the Association and other organizations as will enable the business press to exert the maximum influence for sound industrial and governmental policies.

The resolutions set forth that while an increase of government activities during the war were necessary, it is now desirable that government activities in relation to business shall be reduced to the lowest practicable minimum. Adverse reference was made to such projects as the Plumb Plan and the nationalization of the coal mines. Congress was commended because it evidently is determined not to give serious consideration to any scheme for government ownership of railroads and their management by the employees, but to adopt measures for the return of the roads to private operation.

The enactment of legislation which will cause railway rates to be so made as to encourage adequate development of railroad facilities was advocated.

The following officers of the Association for the ensuing year were elected: President, Samuel O. Dunn, Chicago, Editor, *Railway Age*, and vice-president, Simmons-Boardman Publishing Co.; vice-president, M. C. Robbins, New York, president, *The Gas Age*; treasurer, H. L. Aldrich, New York, president, *Marine Engineering*; members of the Executive Committee, A. J. Baldwin, vice-president, McGraw-Hill Company, New York; R. Marshall, president,

Concrete, Detroit, Mich.; F. P. Porter, president, Building and Buildings Management; A. O. Backert, vice-president and manager, Penton Publishing Co., Cleveland, Ohio; Roger W. Allen, president, Allen-Nugent Company, New York; A. C. Pearson, president, *Dry Goods Economist*, New York.

At the session of the Association on Thursday morning papers were presented by H. G. Lord and H. M. Swetland, president of the United Publishers Corporation, on the business press as "the partners of business." These papers outlined and emphasized the ways in which the business papers can best serve the industries with which they are connected.

Charles Piez, president of the Link Belt Company, and formerly vice-president of the Emergency Fleet Corporation, delivered "An Appreciation by Business." Mr. Piez discussed the industrial situation now confronting the country, and especially the phases of it due to the present radical labor movement. He pointed out that this unrest is largely due to an exaggerated idea on the part of labor as to the amount of the products of industry which goes to capital, and emphasized the necessity of business concerns and business papers frankly and clearly presenting to labor the facts regarding the amount of return derived by labor on the one side and capital on the other from their joint efforts in production. He also emphasized the good that the business press can accomplish by actively engaging in the work of educating business men as well as workingmen regarding the economic principles of efficient production and the advantages of the present American system of industry and government over the socialistic system which organized labor is now disposed to advocate.

An address on "The Significance of the Plumb Plan" was delivered by Samuel O. Dunn, editor of the *Railway Age*. He pointed out that one of the most significant features of the Plumb Plan is that it is the first formal demand made by any large body of American workingmen to have the management of a great industry transferred from the brains in that industry to the hands in it. Since the Plumb Plan was announced the coal miners have proposed a somewhat similar plan regarding the coal mines. Both schemes contemplate the purchase of great industries by the government at the expense of the public, after which they are to be turned over to the employees to manage. It is claimed that great increases of efficiency would be obtained under employees' management, but, Mr. Dunn contended, the great increases in industrial efficiency in the past have been due to the ability and initiative of able men to whom the existing industrial system has afforded the opportunity to rise to positions where they could exert an influence over industrial operations in proportion to their ability. Government ownership and employees' management of industry would interpose insuperable obstacles to the rise of able men to the most important positions in industry, and would put the power of management in the hands of those who would not own the industries and who would therefore have no sense of responsibility for the results of their management. Under the Soviet scheme of ownership and management the individual disappears as a factor in industry, and is replaced by committees of the proletariat.

The sessions of the Association on Friday and Saturday were devoted chiefly to consideration of problems relating primarily to the editing and publishing of business papers.

At the annual dinner on Friday evening A. C. Pearson, president of the Association, acted as toastmaster, and the speakers were Prof. Sorres, of the University of Chicago; Prof. John A. Scott, of Northwestern University, and Major-Gen. Leonard A. Wood. General Wood urged the business papers to oppose the current radical movements and defend the political and industrial institutions which have been established by and under the federal Constitution.

Signal Division Holds its First Annual Convention

Automatic Train Control Considered; Switch Lamp Standards Submitted and Other Details Discussed

THE FIRST ANNUAL MEETING of the Signal division of the Engineering section of the American Railroad Association and the twenty-fourth annual meeting of the former Railway Signal Association was held at the Congress Hotel, Chicago, September 17, 18 and 19, inclusive, with a total registration of 254. R. E. Trout (St. L. & S. F.), chairman of the division, occupied the chair, and H. S. Balliet (N. Y. C.), secretary of the division, acted as secretary of the meeting.

President's Opening Address

The president, in his opening address, dwelt mainly upon the character of the work being carried on by the division and its importance to present day railroad operation. He said, in part:

"A recent typical example of the division's work is the ballast, rail and bonding resistance formula which provides an approved and recognized reference sheet for use not only for a poorly maintained ballast section for track circuits, but also for sections containing zinc treated ties. I personally was unable to convince my own railroad that the annual installation of zinc treated ties should not exceed 12.5 per cent in any track section until I used this division's recommendations. Their adoption resulted in the avoiding of many signal interruptions and saved money by making unnecessary the shortening of track sections.

"The railroads may be led to adopt the division's standards and specifications more freely if a larger number of the field construction and maintenance forces attend the stated and annual meetings so that all standard plans and specifications submitted may be criticised fully. The committee chairmen will thus get the benefit of these men's actual field experience covering years of work. As to new standards, I wish to urge the preparation of standard switch layouts with fittings and that consideration be given the locking feature so that the switch point will be locked with reference to the stock rail instead of to the locking or plunger stand. With the present arrangement it would be possible to remove the stock rail and still complete the locking.

"A well signaled single track division is certainly a step in the right direction, as the signals will increase the capacity of that division, and with the added safety to be derived through the track circuit the signals will, as is being done today, practically eliminate the '31' train orders. The '19' order can be delivered with safety and little reduction in speed. These features, with the addition of insuring the observance of signal indications, in the opinion of your chairman, come very near the goal. The observance of signal indications may be brought about by automatic train control or more severe disciplinary measures for improper observance during surprise or efficiency checks. With this end in view I suggest that the checks and the required discipline be made under the supervision of competent Interstate Commerce Commission inspectors. We all know how thorough these inspectors are after an accident. No manner of protection will entirely eliminate the human equation.

"The automatic train control would have eliminated a large number of our recent serious accidents. The division, through the Railway Signal Association, can well lay claim to the present automatic train control requirements which have been the means of holding the design and consideration

of such devices to those that will pass signal requirements. There are today one or more completed serviceable train control devices for steam railroads that should facilitate the handling of trains to a greater extent than will the automatic signal alone due to the continuous control. That is, these devices assume control of the train instantly whenever a dangerous condition occurs which can be detected by the track circuit. With train control in sight, it is advisable to consider whether automatic block signals should be installed first, getting nearly 100 per cent protection from them with the increased capacity they afford, which later could be followed with installations of train controls, or whether it would be advisable to make complete installations of both.

"The educational features derived through the work of the regional committees have increased the efficiency of the signal departments as the meetings permitted an exchange of experiences and methods that are of great value to our railroads.

Automatic Train Control

"The use of some form of automatic train control has been recommended by the Interstate Commerce Commission for some time in connection with reports covering investigations of serious railroad accidents. This subject was brought more prominently before the railroad officers through the establishment of an automatic train control committee by the United States Railroad Administration on January 14 by Director General Hines. This committee was instructed "to make a study of and report upon automatic train control devices now undergoing tests upon various lines of railroads, or available for test, with their recommendations for installation, and for the practical suggestion of any device now or during its investigation, made available for that purpose, which it may consider practicable and reasonably conforming to the purposes to be accomplished." In this connection the views presented by two members of the division on automatic train control are of particular interest to the operating officers."

The speaker then proceeded to quote from Messrs. Anthony and Shaver, as follows:

C. C. Anthony, formerly assistant signal engineer of the Pennsylvania Railroad, said: "I should like to bring before you at this time a few thoughts in connection with automatic stops or automatic train control. It is my belief that the time has come when trial on a larger scale than usually has been undertaken so far is desirable. A number of years ago, when I was more closely associated with the work of the Railway Signal Association, I made a statement somewhat as follows: 'If a railroad should insist that an automatic stop must be installed on its lines, a practical and workable one would soon be in service.' Possibly I was wrong at that time, but several years have elapsed since and development has gone on to such a point that I feel sure devices are available which will meet the requirements and work successfully in regular service.

"I think we know pretty well that not all the work done in this field has arrived at the development of one or more good automatic stops; at least in some cases, it has seemed that this was a mere incident and that selling stock was the main thing. But in several cases conscientious efforts have been made by individuals, not often by the railroads, on development work in connection with automatic train

control apparatus. I believe we have reached the point where one or more such devices may be expected to give satisfactory service and should be tried and proved on a fairly large scale. A great deal of money has been spent on development work which cannot go much further without much more extensive trials than have usually been given so far. Requisites of automatic train control have been formulated and revised several times; but requisites alone will not bring results. Those who are working conscientiously in this field need the help and encouragement of extensive operation in service. An engine division commonly is accepted as the proper unit for a trial installation of a train control device.

"Possibly this is not the time to make such a suggestion, but an expression of the conviction of the signal division that large scale trials of train control devices are desirable—that the time for further development by that means is here and no longer in the future—would certainly give enough impetus to the work; this, of course, provided the division has reached that conclusion.

"It seems to be the thought of many that all sorts of difficulties are in the way of practical applications of a system of automatic train control. I think few of us have gone into that part of the problem in detail. We simply have thrown up our hands at the prospect, and have been more than willing to put off the effort until it should be forced upon us. I recently have had occasion, however, to give the matter some study in possibly its most difficult phase—the application of automatic stops on single track—and I think I may say that the difficulties are not so great as we have imagined. Some changes in the signal controls when they also become automatic stop controls are, of course, necessary to secure full protection between opposing trains without interfering with their approach at meeting points. But the problem does not seem so monumental, after all, when one gets down to the details.

"I wish to leave with you these two thoughts; that the next step in the development of automatic train control—a step that the art is now ready for, and that ought to be taken in the very near future—is trial on a large scale, with hearty co-operation on the part of you who are on the railroad 'side of the fence'; and that there is no need to shrink from the difficulties to be overcome in dealing with practical operating conditions."

A. G. Shaver, consulting signal and electrical engineer, speaking on the same subject, said in part:

"The railroads have not given heretofore much attention and money to the development of new ideas and new schemes for their own use. This development has been carried on mostly by the inventors and the manufacturers, sometimes at heavy expense. The time has arrived when the railroads must interest themselves in such matters, at least to the extent of lending a helping hand.

"Automatic train control development requires much experimentation and costs considerable money. Thus far the railroads have not shown great enthusiasm regarding it. Many operating officers favor it; I have an idea a majority of them do. Of course, the railroads look to their signal engineers as experts in such matters, and they depend on their reports and opinions. The signal engineer is naturally conservative, and especially in a subject so important as train control he does not want to make any mistakes.

"His duties are numerous, and he is a very busy man. He does not have time to study and analyze highly technical subjects of such broad scope and difficult detail as train control is supposed to be, and for the same reasons also it is difficult for him to keep up with progress in the art as fully as he would like to do. Therefore, he considers train control cumbersome and complicated—although Mr. Anthony says it is not, and I agree with him. Hence, generally

speaking, the signal engineer is not enthusiastic and encouraging regarding it.

"Because of general sentiment favoring automatic train control, we signal engineers must set ourselves to the task of becoming familiar with it and of being charitable in our consideration and criticisms, which I am sure we shall be when we are fully informed. And we should use our influence with the railroads that train control systems of merit shall be given an opportunity and a fair show in demonstrating what can be done by installations being made of sufficient size and extent to be considered worth while; for example, equipping an engine division as Mr. Anthony suggests. Signal engineers can be of much help and it is due them that they should have credit for their part in such an important undertaking."

First Day's Committee Reports

Thirteen of the 17 committees of the Signal division submitted reports for discussion and action. At the first day's session reports were made by Committee No. 16—Standard Clauses and Sections; Committee No. 2—Mechanical Interlocking, and Committee No. 3—Power Interlocking.

Committee No. 16, F. B. Wiegand (N. Y. C.), chairman, in connection with the standardizing of various clauses and sections in the different specifications as adopted by the Signal division reported on general provisions; standard sections; general electrical requirements and on phrases and words. A brief discussion took place on the information submitted. It was voted that the report as revised be approved and submitted to letter ballot for inclusion in the manual.

Committee No. 2, C. J. Kelloway (A. C. L.), chairman, reported on specifications for a mechanical interlocking machine, having approved Saxby & Farmer locking; on a compensation chart and a specification for machine locking with a view of establishing uniformity and sequence. A compensation chart revised to meet the suggestions made by members at the annual meeting in New York in 1918 was presented as a part of the report.

There was some discussion on the question of using a greater lever length for interlocking machines to permit greater ease of operation. Some members said that the Saxby & Farmer machines used in Canada, England and France have longer levers, thus increasing the ease of operation. It was pointed out, however, that it was necessary to have a specification for the machines of the Saxby & Farmer type now manufactured in this country, and if special machines were desired another specification would have to be drawn up to cover the conditions.

It was suggested that the committee, in preparing a specification for mechanical locking, provide for clearing opposing signals on the same route when no traffic is handled on the crossing line, so as to dispense with the need of operating the plant at certain periods, thus reducing the expense of operation. The compensation chart submitted will enable construction forces properly to set compensators for temperature changes. After revision the report was approved and will be submitted to letter ballot for inclusion in the manual.

Considerable discussion occurred on the specification for machine locking, establishing uniformity and sequence with reference to the locking of lifting type derails in both the normal and the reverse positions. Some changes in phraseology were proposed, and it was decided that the report be accepted as progress and referred back to the committee.

Committee No. 3, F. B. Wiegand (N. Y. C.) chairman, submitted specifications for electric locks for interlocking machines; for power interlocking machines; for universal first and second range voltage electric lock for hand operated switches; and for universal electric motor switch operating and locking mechanism, first and second range voltage.

The specification for electric locks for power interlocking

machines developed some discussion with reference to the phraseology used in various parts of the report. The report was received as information. It was felt that better provision should be made in the specification to cover the wiring between terminal boards and electric locks, light levers, etc., on the machine. A number of revisions were suggested and the committee recommended that the specification as revised be adopted for submission to letter ballot and inclusion in the manual, which motion was carried.

Little discussion was brought out on the specification for universal first and second range voltage electric locks for hand operated switches, and it was moved that this specification be received as information. Motion carried.

Considerable discussion occurred in connection with the specification for universal electric motor switch operating and locking mechanism, first and second range voltage, with reference to the average operating thrust of 700 lb., and the time of operation. It was the feeling of the manufacturers that the present low voltage switch machines could not be operated in the time specified with a thrust of 700 lb. on the throw rod. It was moved that the specification for universal electric motor switch operating and locking mechanism, first and second range voltage, be referred back to the committee for further action and consideration; which motion was carried.

The Second Day's Session

On September 18, the committees submitting reports were Committee No. 11—Batteries and Switchboards; Committee No. 5—Rules for Maintenance and Operation; Committee No. 4—Direct Current Automatic Block Signaling; Committee No. 8—Alternating Current Automatic Block Signaling, and Committee No. 10—Signaling Practice.

Committee 11, R. B. Elsworth (N. Y. C.), chairman, submitted a specification for primary battery jars, which after a little discussion was accepted and submitted to letter ballot for inclusion in the manual.

Committee No. 5, L. R. Mann (Mo. Pac.), chairman, submitted instructions for the installation and handling of caustic soda batteries. The discussion brought out slight changes in wording for certain paragraphs, which were accepted by the committee, after which the report as revised was adopted and submitted to letter ballot for inclusion in the manual.

Committee No. 4, C. F. Stoltz (C. C. C. & St. L.), chairman, presented unit specifications for direct-current motor-operated signal mechanism, 10 to 30 volts. Considerable discussion was offered on the various sub-paragraphs and many minor changes in phraseology, and additions were suggested for the committee's consideration. This specification was referred back to the committee.

A report was also submitted on the use of zinc treated ties in track circuits, which, in part, follows: "As the electrical conductivity of zinc treated ties decreases with age during the first year better results may be had by allowing the ties to season for a period of from two to six months before using in a circuited track, thus avoiding the use of the tie while its conductivity is greatest.

"For good results the number of zinc treated ties installed per year in any track circuit should not be greater than 15 per cent of the total number of ties in that circuit."

In the discussion of this subject, C. A. Dunham (G. N.), said that after 15 years' experience with zinc treated ties he had found that the ordinary tie renewals in track circuits did not affect the operation of the circuit if it did not exceed 3,000 ft. in length. F. W. Pfefling (U. P.), said that in his experience with zinc treated ties when not more than 0.3 or 0.4 lb. of zinc chloride per cu. ft. was used he had experienced no trouble in connection with track circuits with ordinary tie renewals. Some zinc treated ties having as much as 0.5 lb. of zinc chloride per cu. ft., however, had

caused trouble and made it necessary to shorten up track circuits where these ties were used. The report on the zinc treated ties was submitted as information.

Committee No. 8, C. H. Morrison (N. Y., N. H. & H.), chairman, reported revisions suggested at the June meeting covering material included in various specifications for A. C. automatic block signaling. It was ordered that the specifications presented at Atlantic City in June, and as revised, be submitted to letter ballot for inclusion in the manual.

The committee recommended that the specification for alternating current electric generators be cancelled and eliminated from the manual as the revised specification for alternators covers the subject; and this was agreed to. The specification for single-phase track transformers, 250-volts or less, was recommended by the committee to be eliminated from the manual as the specification for single phase line transformer, oil-immersed, self-cooled and the specification for single phase track transformer cover the above subject. It was moved that this recommendation be adopted and the motion was carried.

Committee No. 10, J. A. Peabody (C. & N. W.), chairman, in presenting the report on the problem of signaling railroads with reference to the effect of signaling and the proper location of passing sidings on the capacity of the line, decided that the work on this subject is complete insofar as it relates to the proper location of passing sidings on the capacity of the line, and that the problem of signaling can more properly be handled by the sub-committee which is assigned to report on requisites of signal locations for automatic block signals for single track roads. The recommendation of the committee that this subject be considered closed was adopted.

The committee reporting on automatic train control submitted for the information of the members of the division the definitions and requisites adopted by the Automatic Train Control Committee of the United States Railroad Administration on February 4, 1919. It was recommended that these requisites be accepted as information. The discussion with reference to the automatic train control following the presentation of the requisites is given above.

The Third Day's Session

Reports were presented on September 19 by Committee No. 9—Wires and Cables; Committee No. 15—Valuation; Committee No. 17—Specifications for Oils; Committee 13—Electric Testing, and Committee 6—Standard Designs. After the submission of the last report the results of the election were announced and other unfinished business presented.

Committee No. 9, W. H. Elliott (N. Y. C.), chairman, submitted for consideration a specification for wire joints, accompanied by drawings, Nos. 1403 to 1407 inclusive, and also submitted a specification for friction tape. It was the sense of the meeting that not enough construction details in the form of instructions were contained on the drawings, inasmuch as they represented the only information furnished the men in the field. The various drawings were criticised from a construction standpoint, and numerous suggestions made; after which the report was referred back to the committee for further consideration. The specification for friction tape was discussed to some extent, and it was voted that this be approved for submission to letter ballot for inclusion in the manual.

Committee 13, P. M. Gault (I. C.), chairman, presented a specification for portable direct current volt-ammeters. During the discussion the committee accepted several minor changes which were suggested, after which these specifications as revised were approved for submission to letter ballot for inclusion in the manual.

Committee 15, J. M. Carley (B. & A.), chairman, submitted a progress report in part as follows: "We have

concentrated our work on: the average life in years of the important units of the different types of signal installations, considering depreciation and obsolescence separately; tables for the different types of signal installations which will show the percentage of material to be added to cover waste, contour, sag, loss, breakage, etc., and on the extension of the study made of labor costs by a joint signal committee of the Interstate Commerce Commission and the President's Conference Committee, to establish a percentage to be added to material, to arrive at the total cost. Studies are being made to establish a percentage to be added to the cost of material to cover labor and other costs in the installation of highway crossing signals, bells and gates. The committee has prepared a list of about 100 major items of signal material which is to be mailed out to signal engineers for obtaining information as to the average service life of the various units. The report was accepted.

Committee No. 17, I. S. Raymer (P. & L. E.), chairman, submitted a specification for mechanism, lubricating oil and an historical sketch on oils. The specification for the oil was discussed at considerable length, and some felt that it should include two grades of oil, one for use in the northern section of the country and the other for use in the southern section.

A representative of one of the signal manufacturers stated that it was necessary to have two grades of oil because of the climatic conditions, that is, one grade for certain sections where the temperatures were high and one for the sections where they were low. It was claimed that if one grade of oil only was provided for the entire country it would necessarily have to be for use in that part where low temperatures prevailed, and when this oil was used in hot climates evaporation would make it necessary for the mechanisms to be oiled more frequently. The report was turned back to the committee for further consideration. The historical sketch on oils was accepted as information.

Committee No. 6, F. P. Patenall (B. & O.), chairman, submitted for adoption at the meeting one revised drawing and three new ones. In addition, four new drawings were presented as information and for discussion. The drawings presented for adoption were R. S. A. drawing 1014, one-way horizontal type compensator, revised; drawing 1459, staff tip adapter, new; drawings 1460, switch lamp (cylindrical type), new, and drawing 1461, switch lamp base socket, new. These were accepted for submission to letter ballot for inclusion in the manual. The four new drawings submitted as information were: Drawing 1440, switch lamp (spherical type); drawing 1470, train marker lamp; drawing 1480, engine signal lamp, four lens, and drawing 1490, engine signal lamp, two lens. These were accepted as information.

During the discussion objections were raised to the use of the same size lens in switch lamps when they contain more than one because, even though it is the practice to have damaged lamps repaired at a central point by experienced men, it sometimes happens that roadmasters and others have been successful in getting through requisitions for new lenses and have made repairs in the field which have resulted in not getting the lenses in the proper place. It was the thought of the committee, however, that all such lenses should be the same size as this is a matter which has been thoroughly discussed at previous committee meetings. It was also felt that one type of lamp bracket socket should be used on all cars, because of the interchange of cars.

Officers Elected

The officers of the division chosen for the ensuing year are as follows: Chairman, C. J. Kelloway (A. C. L.); first vice-chairman, F. W. Pfleging (U. P.); second vice-chairman, F. B. Wiegand (N. Y. C.); secretary, H. S. Balliet (Grand Central Terminal). The following were elected to the Committee of Direction to serve for a period of three years:

W. H. Elliott (N. Y. C.); C. H. Morrison (N. Y., N. H. & H.); J. A. Peabody (C. & N. W.); F. P. Patenall (B. & O.), and R. E. Trout (St. L. & S. F.). Those elected to serve for a period of two years are: C. A. Dunham (G. N.); G. E. Ellis (I. C. C.); H. K. Lowery (C. R. I. & P.), and E. E. Worthing (So. Pac. Lines, Atlantic System). Those elected to serve for one year are: J. H. Cormick (Can. Nat'l.); W. J. Eck (Southern); A. H. Rice (D. & H.) and E. G. Stradling (C. I. & L.).

Change in Schedule of Meetings

It was announced that because of the necessity of having all reports in the hands of the Executive Committee of the American Railroad Association not later than October 15, in order that this committee might act upon them at its November meeting, it would be advisable to change the present schedule of meetings. In this connection it was the sense of the Committee of Direction that the first stated meeting should be held at New York the first week in December, the second stated meeting to be at Chicago in March, and the annual meeting should be held in July. This arrangement would give the various committees opportunity to round out their work and report to the Executive Committee of the American Railroad Association. The time between the July and the December meetings would also give all committees a long period to prepare reports for presentation in December. The proposed change was given as information, and will be presented to the division for approval by letter ballot later.

Signal Appliance Association

The officers of the Signal Appliance Association, chosen for the ensuing year at a meeting held in Chicago, on September 17, are: Chairman, A. S. Anderson (Adams & Westlake Company); vice-chairman, J. Warren Young (Kerite Insulated Wire & Cable Company); secretary and treasurer, F. W. Edmunds (Schroeder Headlight & Generator Company). Those elected to the Executive Committee are: W. J. Gillingham (Hall Switch & Signal Co.); M. R. Briney (Federal Signal Company); C. S. Pflasterer (National Carbon Company); W. P. Allen (Union Switch & Signal Company); J. W. Hackett (Okonite Company); H. G. Thompson (Transportation Engineering Company); S. G. Johnson (General Railway Signal Company). The chairman of the Arrangements Committee for the ensuing year is Henry Lee (Simmons-Boardman Publishing Company), and the chairman of the Place Committee is George A. Blackmore (Union Switch & Signal Company).



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A Railway Car Converted Into a Bolshevik Library at Riga

Organization for Purchasing and Stores*

Executive Officer Should Supervise Purchasing, Selling, Storing,
Handling, Protecting and Disbursing

By Henry B. Spencer

Director, Division of Purchases, United States Railway Administration

WHEN THE RAILROAD ADMINISTRATION was being organized, the function of purchasing the larger items of material, the use of which was more or less common to all railroads, such as rolling stock, rail and ties, as well as general supervision of the purchasing of all other supplies, was combined with the function of providing the finances for the operation of the railroads under the Division of Finance and Purchases. The director of this division was assisted in his duties by two committees, each composed of three members, one known as the Advisory Committee on Finance and the other as the Central Advisory Purchasing Committee.

It was determined later that the relation between the financing of the railroads and the purchasing of their necessary supplies was not so intimate as might be supposed, and this finally led to a separation of the functions of finance and purchasing and the creation of two distinct divisions, known as the Division of Finance and the Division of Purchases, each in charge of a director with assistant directors replacing the original Advisory Committees.

The work of the Central Advisory Purchasing Committee, which was subsequently absorbed in the Division of Purchases, has been very largely carried on through the local purchasing organizations of the various railroads, supervised as to detail by regional purchasing committees, which form a part of the staff of each regional director, and through him report to the director of the division.

The railroads under federal control annually purchase material and supplies of all kinds to the value of approximately \$1,700,000,000. Since the organization of the Division of Purchases, it has expended directly \$400,000,000 for rolling stock and \$9,000,000 for rails, and has quite directly supervised the production and distribution of 120,000,000 cross ties which have cost \$90,000,000. From the inception of the work it has been the policy of the director in disbursing these large amounts to obtain the widest possible distribution of the business among all of those manufacturers who were able to supply any portion of the railroad requirements and to encourage as much as possible individual initiative on the part of those supplying the materials for the railroads, and to give all of the various devices which have been presented for attention, careful and impartial scrutiny with the object of adopting for use as many of them as could be shown to offer results that were satisfactory from both mechanical and economical standpoints.

Cross Tie Situation

The cross tie situation has presented one of the most difficult problems with which the division has had to deal. A great many interesting facts have been developed by the concentrated survey which the division has been enabled to make of the entire field of tie production, and one of the lessons we have learned in that respect has been that in a great many cases the local production has not been developed or conserved to the best advantage, so that in a large number of cases individual railroads have drawn on foreign territories for a larger portion of their supply than was economi-

cally necessary and to that extent have increased their own cost of operation and have influenced higher costs on other railroads through competition established in the territories from which they procured certain portions of their supply.

I believe that if when the railroads return to private management the executive officers will give serious thought to some co-ordination of action with respect to the development and economical distribution of the tie supply of the country considered as a whole, most beneficial results can be obtained in their costs of maintenance, in which the cross tie plays such an important part.

One step towards a permanent improvement which, in my judgment, is vital to the best interests of the railroads as well as of the tie-producing industry, would be the adoption by the railroads of a standard specification for controlling the purchase of cross ties and a uniform and universal application of the requirements of such a specification by a standardized inspection. The efforts which the Railroad Administration has made to bring about such a condition have not only met with the unqualified endorsement of the more reputable tie producers, but have acted to improve the average quality of the ties being used by the railroads, as well as to conserve the timber from which they are produced. I believe that concerted action in this direction on the part of the railroads, taken perhaps through the medium of the American Railroad Association, would prove to be of incalculable benefit.

Due to the abnormal conditions existing in the manufacturing world during the year 1918, the difficulty of obtaining supplies for the operation of the railroads became increasingly great and the Division of Purchases was directly represented in every section of the War Industries Board which had to do with the allocation and control of manufactured products used by the railroads, and was in constant touch with the Priorities Board and the Price Fixing Committee.

In the original organization of the Railroad Administration, no definite provision was made for any distinct supervision of the cars and distribution of the material bought under the jurisdiction of the Division of Purchases, the work of this character being left to the discretion of the regional directors and the local federal managers.

Railroads Carry Too Much Stock

At the beginning of federal control the railroads had reserve stocks of material in their possession aggregating in value \$495,680,000. The difficulty of obtaining deliveries of material within any reasonable time and the higher prices paid for such as was obtainable, resulted in greatly increasing the value of these stocks, which on July 1 of this year had reached the enormous total of \$642,192,000, an amount, by the way, which is much larger than necessary. It is gratifying to be able to report that through the co-operative effort of the federal managers and their respective organizations these large balances are being reduced. (Since January 1, \$14,000,000 worth has been transferred.)

The constantly increasing investment in material did not fail to attract attention and led to an investigation of the causes. It soon became evident that there was no uniformity of practice among the railroads with respect to the

*From an address at the September meeting of the New York Railway Club. Mr. Spencer was prevented from attending the meeting because of the death of his mother. He was represented by Assistant Director George G. Ycomans.

purchase, conservation and distribution of their material. This lack of uniformity in the handling of such a large investment led to an examination of the methods and the results which were being obtained by the different railroads. It became apparent that the best results were being obtained by those railroads which had entrusted this work to a department created exclusively for that purpose, and to which was given the sole responsibility for the proper care and distribution of the material and the accounting for its receipt and disbursement. These organizations were found to be working with various degrees of success on different railroads but, generally speaking, were obtaining better results than were found on those railroads where the work of this nature was wholly or partially under the jurisdiction of other operating departments which used the material.

The amount of material in stock on July 1, 1919, represented an average supply sufficient for six months' operations, based on the average monthly consumption during the first six months of the year. Those railroads which have maintained for some years well organized and effective stores departments have been able to so control their investment in material that it did not exceed an average of four months' supply. If all of the railroads had been equally well managed in this respect they would have expended approximately \$215,000,000 less for their material than they actually did expend in the last 18 months.

Relation Between Purchasing and Stores Departments

It further became apparent that the relation which existed between the work of the purchasing department and the stores department was so intimate and their activities so vitally interwoven, and that the results which were being obtained on railroads which had recognized the affinity of these departments in their form of organization, were so much better as a rule than those obtained on roads where this relationship was not recognized, that it was determined to combine the operations of the stores department with those of the purchasing department, under the jurisdiction of the Division of Purchases, and joint instructions to that effect were issued by the directors of the Division of Operations and the Division of Finance and Purchases in October, 1918, the general tenor of which was that an independent stores department reporting to the purchasing agent should be organized on each railroad under federal control.

The necessity for a strong organization working along well systematized and effective lines to properly care for the vast amount of materials in which the railroads have so large an investment, may be illustrated by the following approximate figures, comparing the amount of money spent for material by the railroads under federal control with their operating revenues and expenses:

Approximate average daily operating revenues.....	\$12,600,000
Approximate average daily operating expenses.....	11,300,000
Approximate average daily purchases.....	4,600,000
(These purchases do not include any rolling stock.)	

It will be seen that out of every dollar earned 36½ cents is expended for material.

Operating Officers at Fault

One of the fallacies indulged in by the average railroad operating officer seems to be that he does not regard money expended for material as being money spent until it appears in and affects his operating expenses. To this fallacy I attribute much of the apparent lack of interest on the part of railroad executives to bestow the same careful attention on the stocks of material which are accumulated by their subordinates that they give to the other details of their business. As soon as money has been transformed into material, it has apparently lost all value until it reappears in the shape of an operating expense, and some of us have not yet learned that it requires even more diligent attention to prevent serious losses through improper care in the pur-

chase, distribution and accounting for material than for the money itself which it represents.

For a great many years it was one of the accepted theories that the users of material were the men best qualified to determine the amount which it was desirable to provide for future use, to care for the material which had been provided, and to account for its ultimate disposition.

To this theory is due the unnecessarily large accumulation of material found on many railroads. It is still being acted upon in some cases, although its validity has been disproved by the advance which has been made during the past 15 or 20 years in the methods of handling this important branch of railroad operation.

It has been effectively demonstrated that this work can be more economically and efficiently performed by an organization devoting its entire attention exclusively to that feature of the business and working independently, but in co-ordination with those departments whose functions include the using of the material. The sole function of the stores department is to provide materials and supplies suitable for the service for which they are required, when and where they are needed and at the lowest net cost, which involves the work of properly storing and protecting the property until it is used and accounting for it accurately.

Concentrate the Management of the Service of Supply

The receipt and distribution of material is so intimately involved with its procurement that they cannot be successfully disassociated, and experience points directly to a combination of the purchasing and stores department under a single authority as the ideal form of organization for the service of supply.

For the stores organization to be effective and efficient and produce the economy which it should, it is important that adequate and convenient facilities shall be provided for the handling and storing and issuance of materials. The storerooms and yards should be planned so that the materials can be readily inventoried and the storekeeper and his assistants can at all times readily see and know the amount of stock on hand.

It is, of course, advantageous to have modern storerooms, but it is not necessary in order to obtain results that these facilities are immediately built. With intelligent planning and co-operation between the engineering department the present facilities can generally be modernized and made efficient at comparatively small costs, but it is important that in locating and designing any new facilities of this nature, or in remodeling those which already exist, the final decision as to details should be made by those who are directly responsible for the handling of the material. For handling scrap and heavy materials, it is desirable that cranes and other modern facilities for reducing the cost of labor shall be provided. Reclamation machinery should be installed wherever it is found that it will result in economy, and for various reasons this work should be entirely under the supervision of the stores department.

In order to obtain the best results which such an organization should be capable of producing, the importance of its work must receive recognition. It should be immediately apparent that the officers who are entrusted with the investment of 35 per cent of the gross earnings of a railroad should be men of character, ability and experience. Responsibility of this magnitude cannot be successfully placed upon shoulders of incompetent or inexperienced men without resulting disastrously, but with the proper personnel results can be and are being procured which seem almost incredible to those who still adhere to the theories and practices of the past.

Illustrating the possibilities of the case, I quote from the performance records of two typical railroads, one above the average with an efficient organization such as I have

attempted to describe and one below the average which has not as yet fully developed its stores department along the lines indicated.

Road *A* at the beginning of federal control had \$11,840,000 invested in the ordinary run of material, exclusive of rail, ties and fuel. This represented 5.6 months' supply, based on the average monthly consumption for the first six months of this year, and was abnormally high due to large purchases made at the low prices prevailing prior to the entry of this country into the war.

During the 18 months ending June 30, last, this railroad has reduced this investment 17.5 per cent, or \$2,079,000, and is currently using 21.5 per cent of its stock every month, or turning it over more than two and one-half times per year.

Road *B*, a smaller road, which should therefore be more easily controlled in such matters, had an investment in similar material of \$6,955,999 at the beginning of federal control, which represented 5.1 months' supply on the same basis. During the same 18 months' period this railroad increased its stock \$4,731,000, or 68 per cent, and on June 30, 1919, had an investment of \$11,686,000, of which it is currently using only 11.5 per cent monthly and has enough money tied up in material to last it for approximately nine months.

If the supply department of the latter railroad had been as effectively organized and managed as the former, it would have expended \$5,951,000 less for material than it actually spent during the last 18 months, or \$330,000 per month. It would have had that amount free for other uses and would also have avoided the expense of handling and caring for this large amount of stock as well as the inevitable losses incident to depreciation and obsolescence which accompany such unnecessarily large accumulations of material.

These are extreme cases, but they show conclusively that executive officers can well afford to devote considerable attention to this department of the service and to expend sufficient money to secure the supervision of trained experts in this particular field and to adopt the methods which have been successful in producing such economical results.

After carefully studying the practical results which have been obtained by the various railroads under federal control, it is my conclusion that the best means of enabling executive officers to obtain effective supervision and control of these large expenditures is to concentrate the exclusive management of the service of supply in the hands of a single organization created for that particular purpose and to which should be entrusted every detail of the work of procuring, storing, distributing and accounting for all supplies of every description that are required for the maintenance and operation of the property. Under such a system there is no division of authority, and there can be no shirking of responsibility. The records of performance present a complete and comprehensive view of the entire situation with respect to the total investment of the railroad in materials, and render that investment more responsive to the current needs of operation and easier of effective control.

It is not possible to accomplish this where the authority and responsibility for the amount of the expenditure and the custody of the material is divided among several different departments and where the accounts are distributed among numerous independent units, which renders the work so intricate that the combined results cannot be presented in a manner that permits the details to be clearly grasped without laborious research.

The money spent for material is the same kind of money and must be obtained in the same way as the money that is spent for labor, and the requisitions for material purchases should be scrutinized with the same care and attention that is given to the pay rolls. It too frequently happens

that our gaze is focused so persistently upon the pennies in the payroll that we fail to see the dollars in their converted form which are being lost through inadequate supervision and imperfect methods in the purchase and handling of material. There is a natural tendency to shun the expense involved in any work which does not of itself produce a direct and tangible income, but from the figures I have quoted no one can doubt that Road *B* would have been fully justified in adding \$100,000 or even \$500,000 a year to the payroll of its supply department if by so doing they would have created an organization which would have functioned as effectively as the one which Road *A* has built up. It is these concealed losses which are most difficult to bring to light and which sometimes seem incredible when exposed, but I know of no way of exposing them more clearly than in the manner I have endeavored to outline, and until they are exposed the proper remedy cannot be applied.

Recapitulation

To recapitulate: On a large system or railroad the organization for the purchasing, selling, storing, handling, protecting and disbursing of all materials and supplies should be under the jurisdiction of an executive officer of sound business judgment who must at all times be posted on commercial and market conditions. He should be assisted—

(1) By purchasing officer or officers with necessary forces, etc., who will procure the material from the manufacturers and producers with efficiency and economy;

(2) By managers of the stores department with clerks, laborers, etc., who will make requisitions and supervise the caring, storing, accounting and issuing of all supplies. He should keep the supply of material on hand to the lowest practical amount consistent with market conditions.

There should be the fullest co-operation between this department and the departments which control the use and consumption of materials, such as the department of maintenance of way and structures, maintenance of equipment, transportation and construction and improvements.

Railroad Hearings Before House Committee

WASHINGTON, D. C.

SEVERAL DAYS of the hearings on proposed railroad legislation before the House committee on interstate commerce were devoted last week to the representatives of steamship lines, who vigorously opposed the provisions of the Esch bill designed to give the Interstate Commerce Commission jurisdiction over port to port rates. W. E. Clark of Seattle, Wash., representing the Pacific Steamship Company, told the committee that such legislation might result in "regulating American shipping into the bone yard." Legislation to benefit water lines, he urged, should permit a free hand in competitive foreign commerce, including Alaska, and provision for export and import rates on American railway lines applying only to water freight moved by American ships.

A Question as to What Farmers Think

Benjamin F. Marsh, director of legislation and executive secretary of the Committee on Transportation of the Farmers' National Council, told the committee that it is a waste of time for Congress to consider any plan for the return of the railroads to private management. He advocated government ownership and "democratic operation" of the railroads, although he did not define his idea of democratic operation. He said, however, he was not in favor of the Plumb plan unless it were amended in some particulars. When Mr.

Marsh said the farmers are almost unanimous for government ownership. Chairman Esch said he had a letter from Thomas C. Atkeson, representing the National Grange, saying the farmers are opposed to government ownership. Mr. Marsh said that would make it necessary for him to expose the "fraudulent claims" of the National Grange. He declared that instead of having 1,000,000 members it has only 620,000 and that many of them are not farmers; that its membership has never adopted a resolution against government ownership, and that its method of voting is not representative of the members of the state organizations, but represents merely the votes of the masters of the state granges and their wives. He then proceeded to read a number of letters from masters of state granges and presidents of state farmers' unions declaring that the farmers of their states were almost unanimously for government ownership.

Representative Rayburn of Texas remarked that his district is almost entirely an agricultural one, and that the farmers are the most violent opponents of government ownership he knows of. When the letter from the president of the Illinois farmers' union was read, Representative Denison of that state inquired as to whether any referendum of the Illinois farmers had been taken, because, while there might be a farmer in Illinois for government ownership, he had never heard of one. Mr. Marsh said that no referendum had been taken, but that the writer of the letter had given his judgment of the opinions of the farmers. Mr. Denison suggested that he find out more about those opinions before expressing his judgment of them.

Other members of the committee asked similar questions, but Mr. Marsh did not know just how the opinion that the farmers were for government ownership was arrived at except by general knowledge. Chairman Esch asked him if he did not have any letters from opponents of government ownership, because the epistles that Mr. Marsh had put in the record were in reply to a questionnaire he had sent out. Mr. Marsh said he had a few from New England, but that they did not discourage him. Mr. Esch suggested that it would be fair to file both kinds of letters. When the letter from the president of the Washington State Grange was reached Representative Webster asked if that man were not under indictment for sedition. Mr. Marsh said he had been indicted as a result of a Wall Street conspiracy because he had said that the war was a "rich man's war," but that the indictment had been quashed. When Mr. Marsh challenged the committee to investigate Mr. Plumb's charges, Representative Rayburn said they merely represent an effort to "re-open old sores that have been agitated in the newspapers for 50 years with a view to reviving the prejudice against private management."

Automatic Train Control Devices

A number of witnesses interested in automatic train control devices appeared before the committee at the request of Chairman Esch, who has long been especially interested in railroad safety legislation and who recently made a personal inspection of the train control device on the Chesapeake & Ohio near Charlottesville, Va.

J. W. Williams of Spokane, Wash., representing the General Safety Appliance Company, discussed the need for automatic train stops at considerable length and urged legislation providing for the appointment by the President of a committee of five members, only two of whom should be railroad men, to investigate the subject of automatic train control.

On September 20 George W. Stevens, federal manager of the Chesapeake & Ohio, and Charles Stephens, signal engineer of the road, described the installation of the American Train Control Company's system on their line from Gordonsville to Charlottesville, Va. In reply to questions by Chairman Esch, Mr. Stevens admitted that railroad men

and engineers were inclined to be slow to approve of new devices, but the Chesapeake & Ohio had been sufficiently convinced of the practicability of automatic train control, to adopt it. Mr. Esch referred to the objection often made that automatic devices tend to cause inattention or carelessness on the part of the engineer. Mr. Stevens did not think this objection had much force because he said the device made it possible for the officers to check up on the enginemen and to hold them to an accounting. He estimated the cost of the device as about \$400 to \$500 a mile for the track equipment and \$600 to \$700 a mile for the engine equipment. Mr. Esch asked whether the saving resulting from freedom from accidents would offset the cost. Mr. Stevens replied that train control devices would not prevent all classes of accidents, but that they would prevent collisions, and that the Chesapeake & Ohio had had no collisions on its line where the device is installed since its installation. During the first winter, he said, some trouble was experienced as a result of ice and snow, but during the second winter the difficulty had been remedied. The forthcoming winter would constitute a more conclusive test.

Charles Stephens went more particularly into the description of the device, which was described in the *Railway Age* of March 28 and was enthusiastic regarding its practicability; but he said that legislation would be necessary to compel railroads to adopt automatic stops.

Mr. Esch put into the record a letter from Calvin W. Hendrick, president of the American Train Control Company, in which he gave a list from the Interstate Commerce Commission reports of accidents which he said could be prevented by the use of automatic train stops and also described his device in glowing terms. The letter included the following statement: "It is as marketable as it is remarkable; it is elastic in its adjustability; provides absolute and permissive block movements; affords entire protection; it has been extensively tried and is now declared a perfect system and stands unchallenged in the field of safety and economical operation."

"Unsolicited approval of these experts in the science of railway transportation who have written editorially in the *Railway Review*, *Railway Age* and the *Railway Signal Engineer* of what they saw demonstrated on the Chesapeake & Ohio is convincing and leads me to believe that the public is forcefully getting behind a movement exacting just such protection to passengers and freight as the American Train Control System affords."

Mr. Hendrick also submitted a letter from Federal Manager Stevens to him, saying in part: "After testing the system out under service conditions nearly a year, working under weather conditions when the stop shoe was entirely encased in ice, the signal engineer has reported that trains have been stopped when the following dangerous conditions prevailed—open switches—block occupied by train—cars fouling the main line—broken rails—on three occasions. This would seem to justify the cost of installation."

D. P. Moore, a patent attorney who said he had long been interested in automatic stops and had examined many installations, told the committee that the time is now about ripe for legislation to compel their adoption by the railroads. There are several devices that have proved their practicability, he said, and are in a more advanced stage than automatic signals were when they were first adopted. He said that officers of the Chicago, Rock Island & Pacific were enthusiastic about a device he was interested in that has been installed on that line and that can be used without roadside signals; and that enginemen are anxious to have their engines equipped. He said that automatic stops are not yet 100 per cent perfect, but thought that railroad officers are gradually getting more interested in their practicability.

Theodore Perry Shonts

THEODORE P. SHONTS, president of the Interborough Rapid Transit Company, died at his home in New York city on the morning of September 21, at the age of 63.

Mr. Shonts had been a leading figure in the railroad and engineering world for nearly 40 years. He was best known as superintendent, general manager, and president of the Indiana, Illinois & Iowa, where his service extended from 1882 to 1902, and as head of the subway and elevated lines in New York city, which position he had held for the last 12 years; but he had figured in many other important enterprises. His character embodied a combination of progressiveness and conservatism which made him a leader in any line which he entered; and his abounding physical and mental energy gave him a remarkable command of details.

He was born in Crawford county, Pa., May 5, 1856, son of Dr. Henry D. Shonts. In his boyhood the family moved to Iowa, and there he was brought up; and in 1876 he was graduated from Monmouth College, Monmouth, Ill. He received his degree of M.A. three years later, and then studied law for two years. While still young he became a partner in the law office of Drake & Baker; through this firm he became interested in railroad building. Having given some attention to civil engineering while in college he soon made his mark in railroad construction, his first railroad work being that of superintendent of the Iowa Construction Company.

In 1882 he was appointed general superintendent of the Indiana, Illinois & Iowa; in 1886 general manager, and in 1898, president. In conjunction with Paul Morton, second vice-president of the Atchison, Topeka & Santa Fe, he acquired control of this road. Later, this was sold to the Vanderbilt interests; and in 1904 Shonts was elected president and general manager of the Toledo, St. Louis & Western.

Having been recommended by Paul Morton to President Roosevelt, Shonts was, in 1905, appointed chairman of the Isthmian Canal Commission, in which position he became president of the Panama Railroad. He spent two years on the Isthmus where he cleansed the cities of Panama and Colon, organized a sanitary force, and did much other preparatory work.

Mr. Shonts was made president of the Interborough-Metropolitan Company in February, 1907, being at the same time president of the Chicago & Alton and of the Toledo, St. Louis & Western; but his New York work gradually absorbed the whole of his energies.

The management of the New York city railways during these dozen years has been a unique task. Mr. Shonts came to it with a fund of general experience and a reputation as an organizer; but the specific problems encountered were in many respects new. With the growth of the city the subway

lines have been greatly extended, both above and below ground, and express tracks have been built on the earlier elevated structures. These improvements have cost hundreds of millions. The enormous train movement has had to be kept going constantly, while the changes were being made, with scarcely an hour's intermission on any track, day or night. The financial burden of these improvements has been borne mainly by the city; but the negotiations between the operating company and the officers of the city and of the state have demanded constantly the talents of an astute diplomat. The newspapers, day in and day out, have furnished the general criticism, (sometimes aided by the city officials); and the state, through the legislature and the Public Service Commission, has criticised details of management and operation. Through all this, the cars have had to carry a traffic constantly over-taxing their capacity; yet the trains have been run with a speed and punctuality really wonderful; and this has been done with a degree of safety which affords quite reasonable justification for the Interborough's claim to be the safest railroad in the world.

Mr. Shonts continued as a director in a number of railroads including the Chesapeake & Ohio, the Iowa Central, the Kansas City, Mexico & Orient, the Minneapolis & St. Louis, the Pittsburgh & Shawmut and the Toledo, St. Louis & Western; and in numerous other corporations.



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T. P. Shonts

The strike of commercial coal dock workers at the coal docks at the head of the Great Lakes has for some time tied up coal traffic at that point and has resulted in increased demand being made from many points in the northwest, which is practically dependent upon the coal passing through the head of the lakes for its winter supply, for cars with which to move coal from this point to distributing centers and smaller towns. The Northwestern Regional Director, in response to these complaints, has been moving from

800 to 900 cars daily from the coal storage docks at the head of the lakes to northwestern points and loading these cars for the return trip with grain. In addition to complaints made concerning the lack of coal cars in the Northwestern Region, lumber interests in the Puget Sound district and grain shippers in the northwestern states have been requesting more cars. Insofar as the lumber loading is concerned the car shortage is more the result of a heavier production of lumber due to the resumption of building throughout the United States rather than to an actual car shortage for the loading of this commodity. Insofar as the grain car shortage situation is concerned, it is cited that in 1918 at the opening of the grain shipping season, 38,000 cars were stored, inspected and ready for the grain traffic in the grain producing states, whereas this year there were only approximately 3,000 cars for this seasonal movement. In addition, the general car shortage in the Northwestern Region is ascribed to the heavy increase in the miscellaneous freight loading, due probably to the resumption of activity in many of the smaller industries.

Labor Makes Protest Against the Cummins Bill

Plumb Hints at a French Revolution Unless His Plan is Adopted.

Samuel Gompers and Warren S. Stone Testify

GLENN E. PLUMB, author of the Plumb plan for turning the railroads over to the railroad employees at government expense, Warren S. Stone, and other labor leaders, appeared before the Senate committee on interstate commerce on Tuesday and Wednesday of this week to protest against the Cummins bill and especially against that part of it which makes it a misdemeanor for railroad employees to strike pending the settlement of their disputes with railroad managements by arbitration. Mr. Plumb was the first witness called and began his testimony with a general economic discussion of the usefulness, significance, etc., of strikes, discussing the question, as he expressed it, from the point of view of the student of economics and not as a representative of organized labor. Following the general discussion of the constitutional right of any man to quit employment which he found distasteful, Mr. Plumb expressed the opinion that it was not within the power—constitutional power—of the legislature to take away by law this inherent constitutional right, and later in his testimony he expressed unqualifiedly the belief that what an individual had a constitutional right to do, individual employees had a constitutional right to do collectively.

He said that strikes had, up to within the last year, been caused by one or both of two reasons, a desire on the part of working men for higher wages or a demand for the recognition of the union. Now, however, conditions have changed. Whenever the strike for higher wages had been successful the capitalists had merely added the wage increase to the cost of the product of labor and thus passed along to the consumer, which included labor, this additional cost. Thus an apparent increase in wages gained by means of a strike did not reduce profits of capitalists, but was taken out of the pockets of all consumers, including labor, through the higher cost of living. Labor, according to Mr. Plumb, now realized that it must attack and cut down the profits of capitalists, that wages, if advanced, must not be passed along as a burden on the consumer, that the laboring class could increase railway wages most effectively by cutting down the high cost of living and, to do this, profiteering on the part of capital must be stopped. Now, therefore, according to Mr. Plumb, we may expect a new type of strike, a strike which shall benefit all consumers. Labor heretofore had struck only to benefit itself as a worker, not as a consumer, but now labor might be expected to, and, in his opinion, would strike against the profiteering of capital.

As an illustration and purely as a hypothetical case, Mr. Plumb suggested the possibility of a strike on the part of railroad labor against the paying of the "exorbitant" rental for the railroads. He was asked whether the contracts which the government had entered into with the owners of the railroads were valid contracts and could be repudiated. This question he did not answer directly, although acknowledging in general that it would not be legitimate for a minority to force upon the government a relinquishment of actual responsibilities. Yet he pointed out that only about 80 of the contracts with the railroad companies had been signed and that more than 100 still remained to be signed. Again and again he returned to the point that the strike could, and, in his opinion, would, in the future be used as a means of cutting down illegitimate profits of capitalists and that, therefore, were Congress to pass a law which would make it a misdemeanor for railroad men to strike, it would not only be unconstitutional, but would tend to continue indefinitely the increased cost of living.

He pointed out that the transportation was the one essential element which entered into the cost of every product bought by the consumer whether or not such product was transported "a single yard" by railroad. He was asked: "Does not a strike limit production?" and answered: "There would be a temporary loss in so far as production for the time was curtailed on account of strike, but if the strike was successful this loss would more than be made up to the consumer by the gain which would result from the reduction in profit of capitalists." In answer to another question along the same lines, Mr. Plumb said that, in his opinion, labor now, if never before, realized its interests as a consumer. This realization is part of the progress of economic life. To take away, therefore, the power of railroad employees to strike would be a direct interference with progress and a step backward in economic and industrial life.

Mr. Plumb was asked whether or not, while fighting the causes of a contagious disease, the patients suffering the disease were not quite properly quarantined. He acknowledged that they were, but he said that the Cummins bill quarantined labor, whereas it should have quarantined capital; that it was not quarantining a patient to jail 2,000,000 railroad employees because they would not work under the conditions prescribed by capital. He said the Cummins bill made no provision to compel capital and railroad managements to meet the demands of labor under penalty of a jail sentence pending the finding of a tribunal, whereas it imposed a jail sentence on labor for its refusal to work until its demands had been satisfied.

Mr. Plumb was asked whether a strike to enforce the adoption of the Plumb plan would be justified. He was most emphatic in his denial and denied equally emphatically that he or other representatives of labor had ever claimed a strike for such a purpose to be legitimate.

He was asked whether or not labor had threatened to strike unless the legislature passed the Adamson law. He denied again emphatically that this was the case and said that the Adamson law had been urged by the administration. One member of the committee told Mr. Plumb that in this contention he was entirely wrong, that he and other members of the committee at present were members of the committee when the Adamson law was under discussion and that he and other members of the committee understood plainly that the brotherhoods threatened to strike unless this passing of legislation was enacted immediately.

The Use of Force a Possibility

Mr. Plumb was asked whether there was no legal way to prevent strikes. He said that he would not go so far as that. He intimated that the way to avoid strikes was to go to the root of the trouble and to enact into legislation the Plumb plan. He likened himself and other leaders of organized labor to the conservatives just prior to the outbreak of the French Revolution. If the progress of evolution was blocked by legislation which would make a strike of railroad employees illegal, revolution would follow. Mr. Plumb talked vaguely and rather guardedly about the seething unrest in the masses, which for the time being labor leaders were generally able to control, although recently, as in the case of a strike of the machinists, the power of the leaders might be overthrown. Asked whether he thought there would be a revolution or not, he said that an industrial revolution was a possibility, although he firmly believed in the ability of

the conservatives, meaning himself and other labor leaders, to control and prevent such a catastrophe by preventing the government from adopting a policy which would further oppress the laboring man. He acknowledged, however, under cross-questioning, that an industrial revolution might be the worst sort of revolution and that he thought the use of force was a possibility.

Asked again whether he deemed it legitimate for railroad employees to strike against the enactment of the Cummins bill into law, he said that it would be illegitimate, but he did not believe it was possible for a law to be enacted and to become effective which would take away the constitutional rights of employees to strike. He acknowledged that the law might legally be passed but he expressed the opinion that it could not and would not be made effective. Pressed to say whether or not a strike would be legitimate if the law were enacted and actually made effective, he said that he did not believe that it could be made effective, but that if it were made effective then his reasoning was wrong. He was asked what he considered a fair return to capital. He said that he thought 6 per cent on the money actually invested and employed in the private operation of railroads was fair and that 4 per cent was ample under a government guarantee. One of the Senators pointed out that the government itself had had to pay $4\frac{3}{4}$ per cent on the last issue of government securities, notwithstanding the fact that these securities were exempt from many classes of taxation, especially state taxation. He answered this question by remarking that the bonds he had bought only bore $4\frac{1}{4}$ per cent interest or less and when pressed for direct answer as to whether railroads should be made exempt from state taxation he said that, of course, if railroad securities were free from taxation they ought to bear a lower interest rate.

Deficit Due to Exorbitant Rental

Mr. Plumb was asked whether in the face of the present large deficit from government operation freight rates would not have to be increased. Senator Cummins was appealed to to express an opinion as to what the deficit would be and said that he thought it would be about \$650,000,000 for the two years. Mr. Plumb said that he thought that the rental was too high by \$300,000,000 to \$400,000,000, although he did not make it perfectly clear whether he meant \$300,000,000 to \$400,000,000 per year or \$300,000,000 to \$400,000,000 for the two years. He thought, however, that the way to increase revenues and thus wipe out the deficit was to lower freight rates, not to increase them. He expressed the belief that if freight rates were to be increased now it would increase, not decrease, the deficit.

Again he returned to the Plumb plan. He said that no one had questioned the constitutionality of his plan; that what he and the other labor leaders proposed to do was to get at the cause of the present labor difficulty by constitutional means, but that if such means were not adopted, it was possible that some other means, unconstitutional, would be adopted by a radical minority.

Testimony of Samuel Gompers

On Tuesday afternoon Samuel Gompers appeared before the committee and protested against Section 29 of the Cummins bill, which provides that "if two or more persons enter into any combination or agreement with the intent substantially to hinder, restrain or prevent the movement of commodities or persons in interstate commerce; or enter into any combination or agreement which substantially hinders, restrains or prevents movement of commodities or persons in interstate commerce such persons so combining and agreeing shall be guilty of a conspiracy and shall be punished by a fine not exceeding \$500 or by imprisonment not exceeding six months."

Mr. Gompers said that this took away the right of railroad labor to strike, to collectively quit its job. The essential difference between a freeman and a slave is the right which the freeman has and which the slave lacks of refusing to work under conditions which are distasteful. Mr. Gompers pointed out that any law, whether called compulsory arbitration act or something else, which took away the right of labor to collectively quit its job made a slave of the laboring man. He said he had had broad experience with the working of various laws to compel arbitration. He cited the New Zealand compulsory arbitration act, which when it was first proposed was hailed as the remedy which would do away with the bitterness of war between labor and capital. But even in New Zealand, where it would seem that conditions were especially favorable for the carrying out of such a law as this, the law proved a failure, Mr. Gompers said. He cited the case of a dispute in the boot and shoe trade. The dispute went to arbitration and was decided in favor of the working men. Whereupon, the manufacture of boots and shoes in New Zealand was stopped and shoes were imported from England. Nor was there anything in the law which could reach this situation. This was only one of many proofs of the unsatisfactoriness of the law and its enforcement virtually had to be abandoned. Mr. Gompers said the Canadian arbitration law had proved entirely unworkable. It exists, but it does not prevent strikes.

"Would labor have entered so full-heartedly into the war if such a law as Section 29 of the Cummins bill had been in effect at that time?" asked Mr. Gompers. "Why should labor, which proved itself unqualifiedly loyal during the war, now be driven into slavery?"

Mr. Gompers pointed out that Congress, if it should enact this Cummins law, would go against all its own precedents, that Congress had reversed the decision of the Supreme Court of the United States in passing the seamen's law, and in passing Section 6 of the Clayton bill Congress had specifically given railroad employees the right to strike.

"Have the railroad men proved traitors?" asked Mr. Gompers. He said that three weeks before the war the American Federation of Labor had unreservedly pledged itself and its members to the support of this country. He said that once a meeting of inter-allied labor leaders was held in London without the attendance of representatives of the American Federation of Labor, a resolution was passed petitioning the Allies to seek a negotiated peace, but later, in September, when another meeting of the same delegates, with the exception of the addition of five American delegates, was held in London, the petition was withdrawn and a new resolution was passed urging the Allies to fight until the soldiers of the Central Empires had been driven from the countries that they had invaded and until the governments of the Central Empires had been overthrown. The American delegates numbered five out of the total of 87 inter-allied labor representatives, but it was the work of these delegates alone, Mr. Gompers implied, which so rapidly changed the attitude of this labor conference before the war.

"Is it a fair reward for labor to now be confronted with this law?"

"You propose to turn the railroads back to private owners, but the railroad workers are to be hand-cuffed."

Again Mr. Gompers returned to the impossibility of enacting any compulsory arbitration act. He said that Carranza of Mexico had issued an order making people who aided a strike liable to the death penalty, but no one was put to death.

"I have done my share to prevent unnecessary strikes, but Americans will never surrender the right to quit work. I don't want to live a minute after this right has been taken away from them," said Mr. Gompers. "There are no strikes in China or in India," said Mr. Gompers, "but in every free country the strike is a necessary part of the freedom of labor."

Labor must have the right to quit work just as Congress must hold the purse-strings of the nation.

"The effect of this bill would not be to prevent strikes. I would strike if necessary even if this law were enacted," said Mr. Gompers. "There is nothing in the law," he said, "to prevent the president or the directors of a railroad corporation from resigning."

At this point the chairman, Senator Cummins, interrupted to tell Mr. Gompers that on this point he was mistaken, that the bill provided that any two persons, officers or directors or anybody else, who combined in the manner prescribed in the bill, were liable to imprisonment. Mr. Gompers brushed this aside as theoretical. The president and the directors and the executive officers could act behind closed doors. The law could not reach them. On the other hand, labor had to act in the open. They were at the mercy of the law.

Mr. Gompers was then excused because of an engagement which he had made earlier, but promised to answer questions of the committee later.

Warren S. Stone Testifies

Warren S. Stone, chief of the Brotherhood of Locomotive Engineers, then appeared before the committee. He disclaimed any intention of being offensive, but he said he believed in straight from the shoulder talk. He said first that he wanted to correct a statement that had been made in the morning session by one of the committee in the cross-examination of Mr. Plumb. Mr. Stone said that it was not true that the Adamson law was forced through Congress by representatives of labor. It was forced through Congress, if forced at all, by the President of the United States; that neither he, Stone, nor any other labor leaders had approached any member of Congress in order to urge the passage of the Adamson law. He said that he and the other representatives of the Big Four had approached the President of the United States and laid before him the demands of the Big Four for an eight-hour day and time and a half for overtime and that finally, at the request of the President, they had withdrawn the request for time and a half for overtime. Mr. Stone was asked whether or not this withdrawal was conditional on the passage of the Adamson law. He acknowledged that it was. He was asked by Senator Robinson whether or not there would have been a strike if the Adamson law had not been passed. He said that there would have been a strike had the law not been passed. Senator Robinson pointed out that the statement made earlier that the Adamson law was passed under compulsion was not a mistake but was a statement of fact. This point was then dropped.

Mr. Stone said that he was a chief executive officer of the Brotherhood of Locomotive Engineers, but he had no power to call a strike, but that he had absolute power to veto a strike and absolute power to call off a strike. He was then asked whether, if a strike was called because of the passage of the Cummins bill or a similar bill, he would veto such a strike. He virtually refused to answer this question on the ground that he did not believe such a strike would be called.

He then took up the Cummins bill, section by section, and found it vicious and impossible. He characterized it as the most retroactive step which had ever been proposed and wound up by saying that he had only had six hours to study the bill so that the specific objections to it which he made were probably not all the objections which he could with more study make. He said the proposed Cummins bill limited the power of the Interstate Commerce Commission; it repealed the Adamson law; it made the transportation board a court of last resort which could deny the granting of wages to labor and from the decision of which there was no appeal but on which board labor had no representation. He said the law throttled the short lines. He said that the section which provides: "Any other indebtedness of any such carrier to the United States which may exist after settlement of ac-

counts between the United States and the carrier shall be evidenced by notes payable on demand, with interest at the rate of 6 per centum per annum," is simply an excuse for higher rates. He characterized Section 10, which provides for the consolidation of roads, as a great gap full of possibilities for graft. He said that the sections dealing with the issue of securities were full of jokers; that the ability of roads to issue short term notes without the consent of any government body opened the door wide to over-capitalization and resulting higher rates; that Section 24, which prescribed the methods under which new securities could be issued, was a joker. Section 25, which provides for sharing excess earnings with employees, he characterized as vicious and a sham; Section 26, which creates a committee of wages and working conditions as a mere bluff; and Section 29, which is the one making conspiracy to interfere with interstate commerce punishable by imprisonment, as "frankly vicious."

In cross-questioning Mr. Stone was asked again and again to say whether or not any tribunal could be created which could arbitrate the differences between capital and labor, and again and again he evaded the direct question or said it was "doubtful." Asked whether it was defensible to tie up the entire transportation system of the country and so bring about conditions of starvation in the cities, he answered that it was wrong for all the railroads of the country to be controlled by a little group of about 12 men on one short block in Wall Street.

He said that, in his opinion, the representation of labor on the board of directors of the railroads, as provided for in the Cummins bill, was of no advantage at all to labor. He was asked whether he wanted a majority representation, then, on the board. He said "No," but reiterated the statement that the representation provided for by the bill was useless.

In the course of the discussion, one of the committee remarked that the government was now operating the railroads.

"Oh, no, it isn't," replied Mr. Stone. "The government is only paying the bill."

Mr. Gompers, continuing his testimony Wednesday afternoon, said that he would rather see his country put to the inconvenience of a general strike than see the workmen made slaves by the Cummins bill becoming a law. He said that there was nothing that Congress could do to prevent the possibility of a general strike of railroad labor, but that in his opinion, no such strike would ever occur. He said that if the Adamson law had not been passed there would have been no strike because the railroad managements were prepared to give in to the brotherhoods.

He thought that a labor representative on the railroad board of directors would be helpful to all concerned. He wound up by saying that the labor leaders could now control the radical elements in the ranks, but that he could not answer for labor if Congress passed such a law as this.

Charles O. Roberts, former ticket agent at the La Salle street station, Chicago, through his attorney, has filed three suits in the Circuit and Superior courts, seeking redress for malicious prosecution and libel against the American Surety Company of New York and officers and agents for the Chicago, Rock Island & Pacific Railroad Company, who caused his arrest recently charged with embezzlement. The suits aggregate \$75,000. Mr. Roberts was accused of taking \$500 of government railway money on August 31. When arraigned before United States Commissioner Mark A. Foote, he testified that, being called home suddenly, he carried the money with him because the relieving agent refused to accept responsibility for it and that on his way to his home he was held up by robbers who stole the money. Witnesses of the robbery testified to the fact and Roberts was discharged by Commissioner Foote on September 23.

Multiple Unit Equipment for English Railway*

Description of All-Metal Cars Offers Opportunity for Interesting Comparison with Similar American Rolling Stock

THE PROBLEM of the designers of multiple unit equipment for the Manchester-Bury section of the Lancashire & Yorkshire Railway was that of designing all-steel electric cars for operation from a 1,200-volt third rail. The maximum grade on the line is 2.04 per cent, and the result of tests made with a train consisting of one motor coach and one dynamometer car weighing 54 and 32.6 tons respectively showed a maximum speed of 40 miles an hour and a maximum acceleration of 2.52 ft. per second.

The contact shoes, which collect the 1,200-volt current from the live rail are directly connected to the main trolley cables running along each side of the car. These trolley

which is illustrated, bears upon a rail known as the Aspinall full protected side-contact live rail. The shoe is pivoted horizontally and parallel to the center line of the cars and is allowed to move freely between stops. A pressure of 25 lb. is maintained on the rail by a spring placed between the top of the shoe and the shoe beam.

An effort was made to find suitable means for isolating the main trolley cable from the contact shoe, either by a fuse in the connecting cable between the shoe and the trolley cable, or a switch of the circuit breaker type. After a thorough investigation it was decided that any such method would be useless, because if fuses were used, four would be required on each car, and at some period it would be possible for the whole of the current for the train to be carried by one shoe, which would necessitate each fuse being capable of withstanding the whole of the current for the train without fusing.

Owing to the fact that the current at starting is about 2,000 amp. it would be more than likely that the substation circuit breaker would open before the shoe fuse was blown. In addition to this, the blowing of a fuse at 1,200 volts is attended by an explosion which, unless the fuse is well protected, might set up an arc between the shoe or its connecting leads and some grounded portion of the truck. Similar reasons apply to the use of the circuit breaker and in addition the housing for the circuit breaker would require a compartment 3 ft. by 3 ft. by 2 ft. in size, which, to be satisfactory, would have to be quite close to the contact shoe.

Trolley-Cable

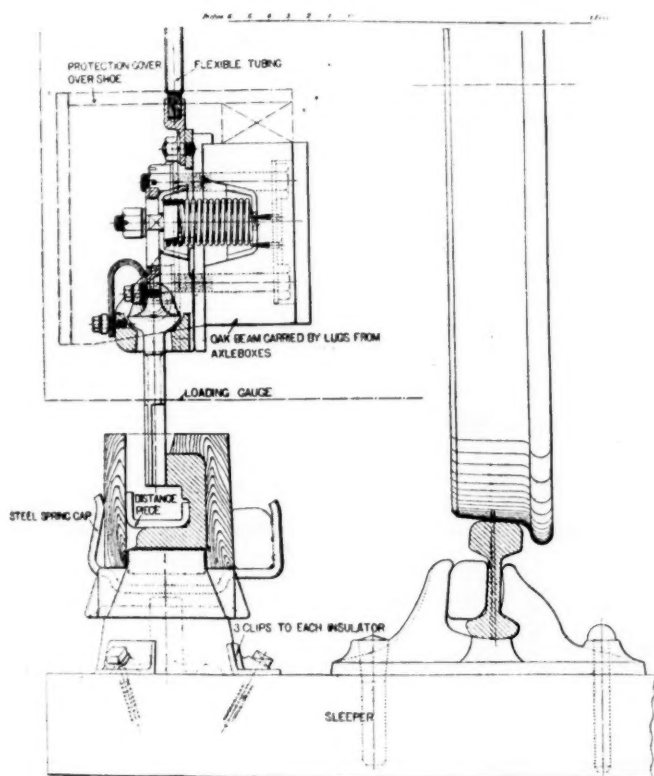
In order that the car be "all metal" in every sense of the term the question of housing the trolley cable gave rise to considerable investigation, and much effort was made to find a substitute for Jarrah[†] timber, which has been used for some years quite successfully on the Liverpool-Southport 600-volt section of the Lancashire & Yorkshire Railway.

Exhaustive tests were made with various kinds of housing materials, but it was found that Jarrah fulfilled all of the conditions most successfully. It is an additional insulation, it will not burn with a flame and it smothers an arc when formed.

Couplers

The electrical connectors used between cars are of the plug and socket type and are so located that when a train is made up the plug of one car is directly opposite the socket of the car next to it. The high-tension couplers are connected directly to the 1,200-volt cable running along each side of the car. A cross-sectional diagram of one of these couplers is shown in one of the drawings. The plug portion is fixed to the car and the contact consists of a copper rod which is split by four saw cuts. Tension is maintained by the small springs *B*; *C* is the socket which is a part of the loose portion of the coupler; *D* and *E* are the connectors to the main trolley cable; *F* and *G* are fiber insulating tubes, and *H* is a mica insulation wrapped around the block forming the socket *C*.

When the plug and socket are in position, as shown in the drawing a spring catch, *J*, comes into operation, which makes it impossible for vibration to cause the plug to fall



Cross Section Through Conductor Rail Showing Contact Shoe

cables are paralleled, and connections are taken through the main knife switches and fuses, then through the circuit breakers to the contactors, resistances, motor cut-outs, reverses, brushes, and finally to the motors, returning to the earth by a connection on the field frame. Another connection from the trolley cable through a knife switch and fuse to the starting switch of the rotary transformer supplies an auxiliary current at 100 volts for the operation of the contactor, pump-motor, lighting and auxiliary apparatus on the car, with the exception of the heating, the latter being taken direct from the trolley-cable. The heating units are protected by grounded metal covers.

Contact-Shoes and Protective Devices

Each contact shoe is secured to a beam fixed between the axle-boxes of the motor trucks. The kind adopted,

*The substance of this description was taken from a paper presented by George Hughes before the Institution of Civil Engineers.

[†]The mahogany gum tree of Southwestern Australia.

out of the socket. The plug portion fixed to the car is hinged and held in a vertical position by a small pin, *K*.

There are two low-tension couplers similar in construction to the high-tension couplers except that they are smaller and each coupler contains a number of contacts. One set of the low-tension couplers is connected with the 100-volt cable from the rotary transformer and the other low-tension set is connected with a multicore cable which controls the con-

ing switch so that it is impossible to open the door when current is on.

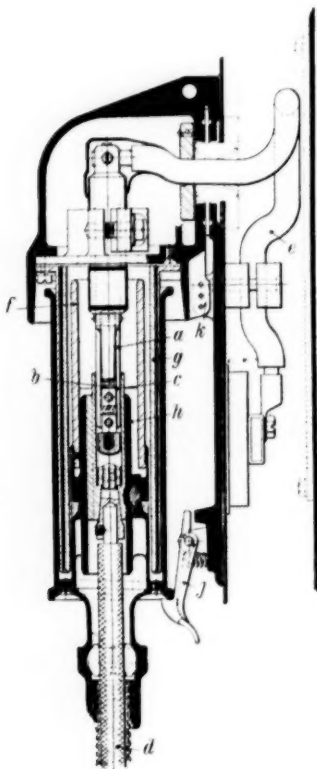
There are two main circuit-breakers on each car. They are of the magnetic shield type, insulated for 1,200 volts, and are so designed that they can be set or reset from the motorman's compartment.

Electrical Control Equipment

The control equipment is of the shunt multiple-unit type, the contactors being operated from a 100-volt circuit supplied by the rotary transformer. Either automatic or manual operation may be used at will in the forward position, and manual only in the reverse. A supplementary field control is used for higher speeds.

When the controller handle is placed in the series or parallel notch the main contactors operate automatically in sequence until the series or parallel running positions are reached. The automatic operation is controlled by means of relays which are governed by the main motor circuit and so arranged that no succeeding contactors come into operation until the motor current has dropped to a predetermined value. The current sequence of operation of the contactors is controlled by electrical interlocks.

Automatic control is installed to prevent the motorman from exceeding the normal acceleration current by operating the controller handle too quickly. It is not a unit saver. Its adoption makes necessary the use of relays and a large number of interlocking secondary contacts. Experience has shown that much attention is required to keep these in effective working order, and the maintenance of relays and extra



Arrangement of High Tension 1200-Volt Coupler

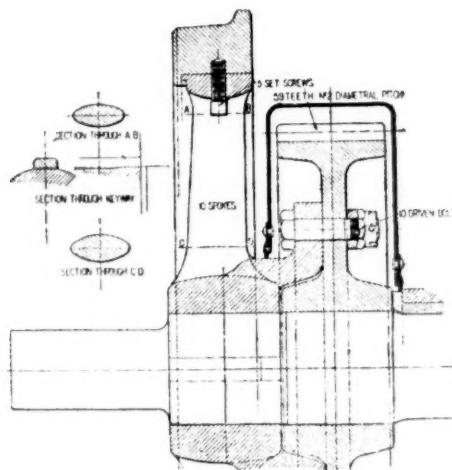
tactors. When the loose portion is not in position it is held up by a dummy holder. The low-tension connecting cables between cars are covered with rubber tubes as a protection from weather.

In connection with the bell-circuits, which are worked from a battery of accumulators, there is also a small coupler in the center of the car.

The rotary transformer is located under the car and is attached to the underframe. It is a compound-wound machine of 10-kw. capacity and has a single armature with two commutators, one at each end. There are two windings on the armature, a high-tension winding being placed in the same slot with and above the low-tension winding. This machine is operated on the high-tension motor side by an automatic control-switch and is protected by a knife switch and fuse.

It has been found necessary to equip the rotary transformer with an automatic starting device because when short trains are in use there may be gaps in the live rail at junctions and cross-over roads. In such cases the current will be cut off for a short period and would cause the motor portion of the rotary transformer to flash over and give trouble if it were not so equipped.

A compartment, which is on the opposite side to that of the motorman, contains all of the 1,200-volt portion of the control equipment. It completely isolates the whole of the high-tension equipment from the remainder of the car by sheet-metal walls and door. All apparatus in this compartment can be operated manually from outside, and the door of the compartment is interlocked with the main isolat-



Section of Wheel and Gear

contacts tends to exceed that of the main contacts. The question of additional motor maintenance, however, due to overloading, is minimized in motors of modern design, especially when the motormen become efficient.

Each motor and each trailer car is provided with two master controllers. There are nine positions of the controller handle, four series notches, four parallel notches, and one for supplementary field control.

There are four positions of the reverser handle: ahead manual control, ahead automatic control, off, and reverse control. Two reverses are fitted in each motor car and each reverser controls two motors.

Each motor car is fitted with two motor cut-outs. Each cut-out controls two motors and is manually operated. It consists of two fixed mica-insulated bars supporting contact-fingers, with a movable contact-barrel between them. Connections from the contactors and motors are made through the contact fingers, and when the contact-barrel is in the normal position both motors are in circuit. When the barrel

is moved to the right, one motor is cut out, and when it is moved to the left, the other motor is cut out.

Motor Trucks

A side elevation of one of the motor trucks is shown. The frames are built of 12-in. by 4-in. by 0.6-in. angle for sole bars (side frame) and transoms.

The greatest advantage claimed for the built-up frame is low maintenance cost. The truck is stiffly gusseted at the top, and horn-plate ties take the place of any necessary trussing. The design is the result of the development of the built-up frame truck, and is calculated to withstand vibration and inertia stresses due to starting and stopping and centrifugal forces at curves.

The gear wheels are pressed on to the axles and also bolted to flanges cast on the running wheels, as shown in one of the drawings. This relieves the axle of a considerable portion of the torsional stress. The wheels are of the standard locomotive spoke pattern, having 10 spokes designed of sufficient strength to withstand the pressure due to tire shrinkage and the shock caused from the fact that a considerable portion of the weight of the motor is carried directly on the axle. The wheels are 3 ft. 7 in. in diameter.

The bolster rests on two sets of four helical springs, and is of the box-girder form, being built of 8-in. by 3-in. channels and $\frac{1}{2}$ -in. plates; the rubbing-blocks are fitted with detachable case-hardened plates for renewal purposes. The

motors are built with solid steel frames and interpoles. The field coils and interpole coils are enclosed in brass cases and solid mica insulation is used in the armature coils.

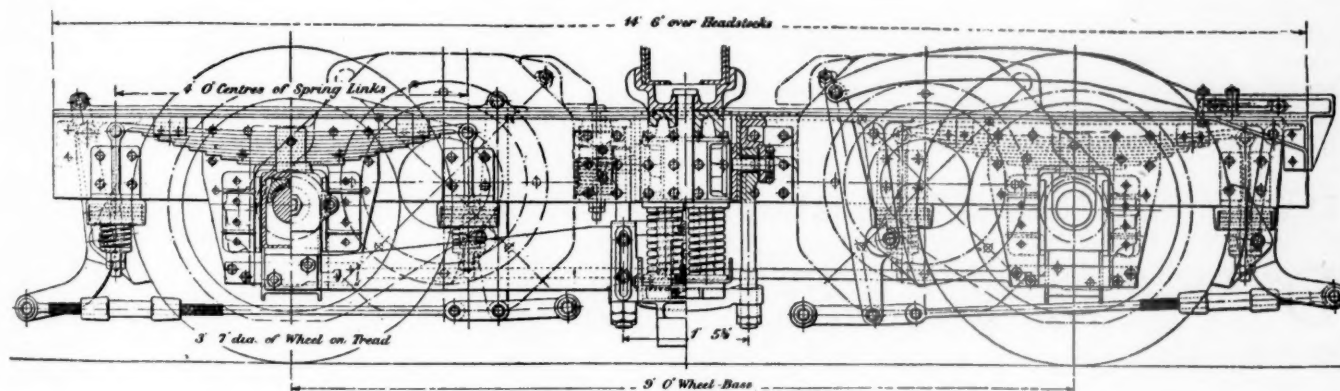
The vacuum type of brake equipment is used, and the vacuum is maintained by a pump having a swept volume of 90.8 cu. ft. per minute, capable of releasing the brake in 12 seconds. There is a brake valve in each motorman's compartment, which is connected to the trainpipe. The brake valve includes vacuum-pump control switch and "dead-man's handle."

The motorman is compelled to retain his hold on the handle when running; should he release it, the handle rises, the vacuum brake is applied, current is cut off from the main motors by a tripping switch below the valve body, and the pump motors are stopped should they happen to be running. The handle has a range of movement without tripping actually occurring, which enables the motorman to move his wrist slightly from time to time and thereby rest his hand without danger of setting the brakes.

Wiring

The high tension 1,200-volt cables are kept separate and distinct from the low-tension 100-volt cables, the former being placed in Jarrah troughing well below the car floor and the low-tension cables immediately under the car floor.

Code signals between the guard of the train and the motorman are communicated by means of bells, one of which



Side Elevation of Motor Truck

bolster has a lateral movement of $1\frac{1}{2}$ in. each way. The swing links are of forged steel and of ample proportion. The upper ends are bushed with case-hardened steel ferrules.

Laminated type of bearing springs are used which have auxiliary helical and rubber springs at the ends. The helical springs have an entire absence of friction, and are very responsive in their movement, while the laminated springs are slow moving; hence a combination of these two gives good riding qualities and minimizes oscillation.

The wheel base is 9 ft., which allows room for the large motor and for a long spring base. A double brake-block arrangement is fitted, thus eliminating unequal stresses in the axle. The outside brake hangers are cranked, so as to leave free access to the adjusting turn-buckles. The standard English practice of attaching the brake block direct to the hangers is adopted. The mechanical advantage of the brake is 8 to 1, giving a total block pressure of 65 per cent of the total weight of the car.

Each truck is equipped with two 200-hp. motors, mounted and geared to the axle through spur gearings, the ratio being 59 to 25. The usual type of nose suspension of the motor has been adopted so that half of the weight of each motor is supported by three sets of concentric rubber springs, and the other half is borne directly on the axles. Thus half of the weight of the motors is spring-borne. This method of suspension was adopted because of its simplicity. The

is in each motorman's compartment, with pushes suitably placed for easy access by either the guard or motorman. Current for these bells is supplied by batteries of accumulators, 14 motor cars being fitted with "Ironclad-Exide" cells, and 14 with Edison cells. There are 6 "Exide" cells to a battery, having a discharge capacity of 150 amp. in 5 hours. They are built up in lead-lined wooden boxes and supplied in two crates with three cells in each crate, the crate being fitted with outside terminals. There are 10 Edison cells to a battery, and these also have a discharge capacity of 150 amp. in 5 hours. These cells are supplied in two crates with five cells in each crate, the two crates of cells being placed in a sheet-iron case, which is suspended from the under-frame of the car. This case is also pivoted on one of the suspending arms, so that when the cells require recharging they can be removed quite easily.

Six spare batteries of each type are kept fully charged or on charge, so that exchange of batteries can be effected in a very short time whenever a car is in the repair shop. A battery can also be used for emergency lighting in case of failure of the lighting circuit.

The lighting is taken from the 100-volt circuit supplied by the rotary transformer. Each motor car is lighted by thirty-three 35-watt lamps.

Power for heating is taken directly from the 1,200-volt trolley cable, and there are 20 heaters arranged in series in

each car. Each heater has a voltage drop of 60, and the current consumed is 7 amp. per heater. Each heater contains 77 ft. of No. 17 S. W. G. high-resistance wire, enclosed in a perforated metal cover. The heaters are arranged along the side of the car between the seats.

Maintenance of Equipment

The operation of the train is so arranged that the vital parts of the electrical equipment, motors and motor trucks are looked over twice a week. During this inspection, the rotary starting switch, contacts, circuit breakers and contact fingers are cleaned if necessary. A weekly examination is made of the controller, reversers, motor cut-outs, motor brushes and the commutator. The brake rod, springs and oil arrangements on the motor trucks are also examined.

The cars are given a general overhauling every six months, at which time the car bodies are removed from the motor trucks, the motors taken out, the armature removed, the commutators examined, turned up and the mica undercut if necessary, the brush gear overhauled, the armature windings cleaned, blown out and varnished, the steel frame cleaned and connections examined, the motor trucks inspected, the wheels turned up if required, and the bearings adjusted. The electrical equipment is thoroughly overhauled, every individual piece of apparatus being inspected and the necessary parts repaired or adjusted and the wiring of the car inspected and put in order.

Once every twelve months the equipment is overhauled, the contactors are taken down, the fingers being taken off and renewed where necessary, and the controller and all other equipment is dismantled and renewed, cleaned and adjusted. According to the author, this periodical examination has contributed materially to efficient service.

Doings of the Railroad Administration

WASHINGTON, D. C.

DIRECTOR GENERAL HINES has authorized the following statement, asking the further co-operation of shippers and receivers of freight in promoting freight car efficiency to avoid a serious shortage of transportation facilities:

"During the war no one was more patriotically helpful than the American shipper. With zeal and efficiency he did his part in the common cause. The Railroad Administration had excellent opportunity to observe this attitude during the war, and has appreciated heartily the subsequent continued co-operation of the great majority of the shippers.

"The time has now come for renewed efforts by both the Railroad Administration and the shippers and receivers of freight so that the nation's transportation service may be rendered with the greatest satisfaction possible under the circumstances. An unusually heavy grain and coal movement, deferred repair and the construction of public highways in all sections of the country and the concentrated requirements of suddenly reviving business, combined with the usual transportation requirements at this time of the year, threaten a serious lack of transportation facilities unless all parties interested co-operate in securing the greatest possible utility from the existing limited transportation facilities.

"In this connection attention is invited to the following extract from a recent public statement of the President:

"We have now got to do nothing less than bring our industries and our labor of every kind back to a normal basis after the greatest upheaval known to history, and the winter just ahead of us may bring suffering infinitely greater than the war brought upon us if we blunder or fail in the process. An admirable spirit of self-sacrifice, of patriotic devotion and of community action guided and inspired us while the fighting was on. We shall need all these now, and need them in a heightened degree, if we are to accomplish the first tasks of peace."

"The Railroad Administration will do its full part. The Car Service Section in Washington and the various regional organizations are striving earnestly to secure a fair and just distribution of the existing equipment as well as to meet the requirements of individual shippers. Of the 100,000 new freight cars which the Railroad Administration ordered constructed, 59,409 had been completed on September 13 and are now in service, and this number is being increased at the rate of over 900 each working day. Instructions have been issued to all regional directors to bend every effort to speed up road and yard movements, to secure heavier loading of equipment, to establish and maintain complete and accurate yard checks, to reduce the number of bad order cars, to make prompt delivery to connections, to effect early deliveries at freight houses and team tracks, to reduce the number of freight cars used in the transportation of company material and to expedite the movement of grain cars in terminals. The hours of labor of car shop employees have been increased and every effort is being made, both in railroad shops and in the shops of private concerns to whom the work is being let out, to reduce the number of bad order cars.

"I earnestly urge all shippers and receivers of freight to redouble their efforts to promote freight car efficiency.

"Shippers of freight can assist—

"1. By loading all cars to full visible or carrying capacity.

"2. By prompt loading and release to the carrier.

"3. By ordering cars only when actually required.

"4. By eliminating the use of railway equipment in trap or transfer service when tonnage can be handled by motor truck or wagon.

"5. By reducing the diversion and reconsignment of cars to a minimum.

"Receivers of freight can assist

"1. By prompt unloading of cars and notice thereof to the carrier.

"2. By ordering goods in quantities representing the full safe carrying capacity of cars and disregarding trade units.

"3. By ordering from the nearest available source.

"4. By pooling orders so as to secure full car loads.

"A resumption of intensive loading will not merely reduce the number of cars under load, but will also relieve congested terminals where it is a question of track room.

"With a strong concerted effort on the part of the Railroad Administration and the shippers and receivers of freight, it is hoped that during the period of abnormally heavy traffic with which we are now confronted the nation's transportation needs may be met with reasonable satisfaction to all parties.

"I earnestly ask the continued and even more effective co-operation of all shippers and receivers of freight."

Director General Hines also authorized a statement that the new cars ordered constructed by the Railroad Administration continue to be placed in service in increasing numbers. During the week ended on September 13, 5,341 of these cars, being at the rate of 890 per working day, were placed in service.

The total number of these cars in service on September 13 had increased to 59,409. The next week, he said, should show still further progress in the number of cars placed in service.

An Imperial Mineral Resources Bureau has been established in London, charged with the duties of collecting information regarding the mineral resources and metal requirements of the British Empire. The bureau is to be directed by a board of governors, comprising one appointed by the home government, one by each of the five self-governing dominions, one each by the government of India and the secretary of state for the colonies, and six representatives of the mineral, mining and metal industries.

Unrest Growing Among Maintenance Men

Survey Shows Increased Wages, Eight-Hour Day, Exodus of Foreigners and Shortage of Labor Complicates Situation

WHAT HAS BEEN the net effect of all of the revolutionary changes in the labor situation during the past 18 months? Has the coming of peace relieved the labor shortage? Is the present supply of men adequate? Have the eight-hour day, the increase in the pay check, and union working conditions made any marked change, for better or for worse, in the efficiency of the employee? These are all-important questions which every supervisory officer has asked himself again and again in the last six months. The signing of the armistice on November 11 was taken by many people to mark the end of most of our war-wrought ills. With the transition from war to peace activities, the return of soldiers and the closing of munition plants, many expected a marked relief from the labor shortage, if not an actual labor surplus. Others, however, maintained that the shortage would continue and even become more aggravated as time went on. Which idea was correct?

With a view to gaining some first-hand, authentic information on this subject a questionnaire was addressed to a number of maintenance of way officers in various parts of the country, soliciting replies to eight questions listed below, covering matters of actual fact and expressions of personal opinion regarding labor problems.

(1) The number of men employed now as compared with a year ago and normal pre-war times.

(2) The effect of the higher wage rate in increasing the efficiency of the existing forces, in attracting a better supply of labor, etc.

(3) The effect of the eight-hour day on increased efficiency, the ability to secure and hold men, etc.

(4) The effect of the reported exodus of foreign labor.

(5) The adequacy of supply of skilled and unskilled labor.

(6) The dissatisfaction with wage scales for men and foremen in the various branches of work.

(7) The general unrest among laborers.

(8) General comments regarding other influences.

The information thus obtained which may be taken as representing conditions on August 1, has been analyzed from the standpoint of the number of men employed, the available supply, the reasons for an appreciable shortage, and the relation of this shortage to the increased wages, the eight-hour day and the exodus of the foreign laborer. The subject of efficiency was studied with respect to the effect of the increased wages, the eight-hour day, organized labor and the matter of general unrest. The results of this analysis are submitted below.

Shorter Hours Reduced Output of Work

The number of men now employed in maintenance of way work is about the same or somewhat less than in years past. Some roads reported more men than were at work

Year	No. of men
1913	17,422
1914	15,321
1915	16,402
1916	14,497
1917	15,389
1918	15,254
1919	16,569

last year, but not as many as in normal times. Several roads are suffering a real shortage of men. One has only 40 per cent of the normal number; another lacks 13 per cent. One

northern road has a normal track force but is short 20 per cent in its bridge carpenter gangs. The foregoing figures supplied by one of the granger roads for the years 1913 to 1919, inclusive, are probably typical of conditions the country over.

However, figures such as these must be considered with one point clearly in mind, namely, that this year's figures are for men generally on an eight-hour day, while the totals for the other years are in nearly all cases for a ten-hour day. Thus, while the total number of men employed this year may not vary to an appreciable extent from previous records, the number of hours worked is at least 20 per cent less. In taking this into account, it must be noted that the dead time spent in getting out the gang car, riding to and from work, unloading and loading tools, etc., is practically the same under an 8-hour day as with a 10-hour day. Consequently the reduction of working time is more than 20 per cent. Some roads have made a definite effort to compensate for this deficiency in working time by employing a larger number of men.

Another factor closely related to this, is the new rule that traveling to and from work should be done during the regular working hours, in contrast to the old rule under which the men should travel in one direction on their own time. One railway officer estimates that this accounts for an additional loss of effective working time of at least one-half hour per day per man.

As a matter of fact, this deficiency in the actual hours of work is compensated for in part by the fact that the roads are doing much less improvement work this year than normally. This, of course, affects also the labor charge for maintenance. As one railway officer expresses it. "Were we able to do the same amount of work done in pre-war times, we would have to have at least 1,000 more men, due to the reduction in working hours per day for the same period." The policy of the Railroad Administration to restrict maintenance of way expenditures has also had an influence, and there is no question but that the large cut in forces made by some of the railroads in June had a pronounced effect on the number of men at work and the relation of the demand to the supply.

A Shortage of Labor Exists

On the general question of labor supply the consensus of opinion seems to be that there is a shortage, especially in the industrial districts. One man refers to it as "normal summer shortage." The dearth of men would seem to be more serious with regard to skilled labor than for unskilled forces, but one report indicates the reverse of this. Territories depending on negro and Mexican labor seem to fare much better than those depending entirely on white men. One peculiar manifestation is the reluctance of the hobo to go outside of the large labor centers where he is now in demand as a strike breaker at attractive wages.

The exodus of the alien is beginning to have a pronounced effect in most districts where he has been a chief factor of the supply. As is now well known, a large number of men of foreign birth, most of them Italians and Greeks and a large number of Poles, have returned to their native lands and many others have applied for passports. Just what their motives are is not well known, although it is assumed to concern the restoration of family ties broken by the war and it is not clear whether these men expect to return to this country or not. However, if this movement continues

unabated without such a compensating return, it will soon be a serious matter. One of the replies received does not take this so seriously and for a rather novel reason, it says "The effect of the absence of foreign labor is not serious, as the efficiency of this class has dropped to a point where, generally speaking, it is the least desirable."

Opinions on the efficiency of wage advances in holding the supply of labor or attracting a better class of men seem to be divided. The question reduces to one of competition. Where the railroad rate is better than that offered by other employers the effect has been good, but in large industrial centers where the men have opportunity to get better paying jobs, the railroad work reverts to the old status in which it attracts only the least desirable class. In rural districts, on the other hand, the class of men now employed is better than it has been for several years. Thus, in the Middle West in particular, the railroads have been able to employ local native help to the almost entire exclusion of the foreigner. This return to old-time conditions has been very welcome, for it not only serves as a compensation for the increasing scarcity of the alien class, but gives the roads a more intelligent and agreeable type of workman to deal with and largely removes the need for camps and commissary facilities.

Eight-Hour Day Not Favored

No discussion of the influence of the increased compensation in attracting men is complete without adequate consideration of the eight-hour day. What a man can earn in his day's work depends not only upon the rate of pay per hour but also upon the number of hours he works. This simple problem in arithmetic is not overlooked by even the most thick-headed workmen in comparing the relative merits of two jobs, and it is the experience of most railway officers replying to the questionnaire that the *net daily rate* of pay as well as the *hourly rate* has an influence where competition for labor prevails. Thus, one report states, "We are paying 40 cents per hour and are getting no better men than we formerly obtained at the old rate. Our men claim that they cannot maintain their families at the rate we are now paying, namely—\$3.20 per day for 8 hours work. If we could work our men 10 hours per day straight time at 40 cents per hour, I am sure we could secure a large increase in our forces." Another says, "The majority of the men prefer to work 10 hours and many of them are insistent on doing so. It requires careful watching to avoid the practice of working overtime, especially among extra gangs." Still another says, "The men would prefer to work 9 or 10 hours a day instead of 8. This would give them more money for their day's toil." The chief engineer of a western line states, "Practically all gangs have made numerous requests for the privilege of working 10 hours, and on portions of the line where industrial competition is keen, it has been necessary to increase the working hours to 10 hours in order to hold the men." Only a few instances were reported where the men indicated a preference for the 8-hour day."

Changes Have Not Increased Efficiency

Considering the changes that have taken place in the status of the maintenance of way employee, during the past year, it is of particular interest to ascertain whether he is any more efficient than formerly. In other words, whether the employer has benefited by the advantages accruing to the workman. Chief among the changes were the large increase in the wage rate and the eight-hour day, but these two factors cannot be discussed intelligently without taking other considerations into account, namely, the advance accorded to other railway employees and those in outside industries, the circumstances under which the advances were granted, the relation of supply and demand in the labor market, and most of all—the growth of the union labor idea.

Only one road reported a definite improvement in the class of men employed together with some advance in the standard of efficiency. In all other cases the reports indicate a feeling that no such increase in efficiency has taken place, and while the higher rate has attracted a better class of men in some cases, the general observation is that the efficiency has been lessened. One railway officer reports an improvement which he believes has resulted from the shorter working period, but the remaining statements report no improvement if not a definite retrogression. Several replies give good reasons for this. One states, "Regular track men now have longer hours for leisure, for cultivation or for other occupations and for pleasure. In consequence, they are less fit to give a full day's work by the physical exhaustion of these additional occupations." Another says of the Mexicans that the shorter working day gives them more time to get into trouble.

Present Influences Are Detrimental

To obtain increased output from any man it is necessary to provide an incentive, therefore in a study of the present labor situation it is necessary to determine what agencies influencing the workmen in maintenance of way service would tend to produce such an incentive or have the reverse effect. There are two prime motives that will tend to make a man work harder. First, the desire to hold his job and, second, eagerness for better pay. The first of these motives is entirely ineffective during any labor shortage, for as soon as a man knows there is no one to take his place, he is not going to worry much about his job. Labor has been scarce so long in this country that the indifference of the laborer as to the opinion of his boss has become almost insolence.

The second motive can be utilized to get more effort out of the men only when there is some relation between the increased effort and the rate of pay and this fact must be clear to the men. There has been no recognition of this in the entire history of the wage advances by the Railroad Administration. Arrangements for increased rates to experienced or leading workmen as provided for in the wage schedules are totally inadequate to provide such an incentive. The wage schedules also automatically suspended the only attempts at bonus systems in use on American railways. The feeling of the men based on their experience is that the force and effectiveness of their representations before the Board of Wages and Working Conditions are infinitely more important in obtaining a raise than any extra effort which they put into their work.

Influences tending to destroy efficiency are much more in evidence than those designed to promote it, but these in general have to do with the feeling of unrest noted in nearly all classes of labor, and are discussed under that heading.

So much has been said about labor unrest in the last six months that it is, in a sense, a trite subject. However, the character of the replies received to the questionnaire is such as to supply much information on which to base a definite analysis of the matter as relating to maintenance of way employees. This current unrest has been ascribed to several agencies, chief among which has been mentioned (1) dissatisfaction with wage increases as affected by the high cost of living, (2) the organized labor movement and (3) the spread of anarchistic doctrine. From the information obtained the importance of these influences, at least insofar as they concern maintenance of way employees, is about in the order named with the third of minor or very slight importance in most cases.

The most natural expression of unrest is manifested by a dissatisfaction with the wages, a subject closely allied to the cost of living. Six of the reports received point to the increased cost of living, or the decreased value of the dollar, as the most serious cause of trouble. As one officer expresses it, "The men feel the effects of high prices charged

for living expenses, and the large increases granted them last year do not improve their actual living conditions as much as might be thought when comparing their present rate with what they received in 1917."

Another evidence of unrest is traced to the feeling among maintenance of way employees that they have not been treated fairly as compared to the men in other branches of the service. In other words, they feel that Supplement No. 4 was more generous in its provisions than Supplement No. 8. This is explained in one report as follows: "This has been due mostly to the fact that every order or supplement issued gives a different effective date and the various interpretations and instructions as between the different classes of employees and supplements were more or less conflicting with a natural tendency to cause dissatisfaction." As is well known, this constituted the principal grievance of the recent agitation for an increase in the wage scale.

The Effect of General Organization

Necessary as any organization of workingmen may be to secure recognition of their contentions and grievances, it is an unfortunate fact that the formation is not conducive to increased effort on the part of the individual. In the case of the maintenance of way employee, this has not been caused so much by agitation on the part of the organizer as by the policy of the Railroad Administration in dealing with the men. For instance, one report states that the foremen "have been more or less dissatisfied for the reason that the men know that their immediate superiors have little or nothing to do with the increases and there has been a natural tendency not to respect the foreman or officers."

One officer describes the condition as follows: "I believe that well over 50 per cent of the men are decidedly against any wage trouble, but on account of the Administration policy of forcing all men to organize and deal only with organized units many of the more stable classes of men have been forced into the organization and are now dominated by force and fear of the radical element."

There has been but limited evidence of agitation of the anarchistic type. Only one report refers to this condition, which is undoubtedly a local manifestation. "This in my opinion is due to the radical teachings and writings of irresponsible men, in a large proportion foreigners, who have no property of their own, many of them without families, and who personally prefer troubled conditions to peaceful conditions. * * * At the present time the country is dominated, both in the skilled and unskilled branches of labor, by the irresponsible, traveling-about younger class of men, who are comparatively a small proportion of the total men employed in this district. Many of our better class of men, married and with families, are unable to do much toward stabilizing conditions, although with assistance by business management, I believe they would soon improve conditions."

Among minor sources of disquiet mentioned in the reports is prohibition. The hobo has not yet adapted himself to the new era and it takes him longer to spend his money. This hobo tendency to lay off because of surplus money has also been noted in other classes.

While the supply of labor is more nearly adequate than during last year, it is not large enough to afford a sufficient force of good workmen. Conditions would be much worse if the railways were employing enough men to compensate for the short working day, or if they were doing as much work as in normal years. The present wage rates, coupled with the eight-hour day, do not afford a daily wage sufficient to attract the best men, while the conditions of employment and the plan of compensation do not encourage efficiency. Unrest is largely the result of the high cost of living influenced to an appreciable extent by the development of labor organizations under government sponsorship. Owing

to the great increase in wages, the cost of maintenance work per unit of work done has increased enormously so that money spent is no measure of the work done. At the same time, a decrease in the percentage of effective working time per hour of time paid for and the decreased efficiency of the men, as compared to the "test period," makes it apparent that the man-hour unit can not be considered a true measure of the work accomplished.

Orders of the Regional Directors

EXPORT BILLS OF LADING.—Supplement 7 to Circular 240 of the Southwestern regional director states that through export bills of lading should not be issued for freight via North Atlantic ports destined to Central and South America, Africa, the East Indies, Straits Settlements, Australia and New Zealand.

Protection of Cotton from Fire.—Order 237 canceling Order 73 of the Southwestern regional director calls attention to the necessity for taking measures to protect cotton from loss and damage by fire and to certain rules already promulgated to prevent fires of this nature. The Central Western regional director issued a similar order September 10.

Grain Embargo—Primary Markets.—Supplement 13 to Circular 83 of the Northwestern regional director states that permit regulations have now been modified to include maize, kaffir corn, and feteria, and they should be handled the same as other grain insofar as permits are concerned. The Southwestern regional director issues similar instructions in Supplement 1 to Circular 247.

Export Bills of Lading via Pacific Ports.—Circular 248 canceling Circular 241 of the Southwestern regional director contains revised instructions for the issuance of through export bills of lading via Pacific ports.

Car Loading—Company Material.—Circular 249 of the Southwestern regional director states that the maximum loading of cars in the transportation of material is particularly important now. Cars containing ties are reaching destination not loaded even to minimum capacity. The circular calls particular attention to shipments of lumber.

Apprentices in Car Shops.—Order 238 of the Southwestern regional director requests that, effective at once, an apprenticeship system be established in the passenger car and freight car departments for both regular and helper carmen apprentices, making the ratio of apprentices to mechanics in the car department the same as that for machinists, boilermakers and other craftsmen.

National Safety Council.—The Northwestern regional director, file 8-1-89, recommends that the chief safety officer of each line attend the annual session of the National Safety Council at Cleveland, Ohio, October 1 to 4 inclusive.

Employees Holding Two Positions and Working 16 Hours.—The Northwestern regional director, file 42-1-99, calls attention to several cases where employees are working an eight hour trick on one railroad and an eight hour trick either in a similar capacity or some other position on another railroad. The rule prohibiting employees from filling two jobs on the same railroad or upon two different railroads must be made universal in the Northwestern region.

Interchange Records.—Circular 250 of the Southwestern regional director contains suggestions for the improvement of car records. Since per diem settlements were discontinued apparently the feeling has prevailed on some railroads that interchange reports are not of the same importance as before; and some inaccuracy is complained of.

Freight Car Distribution.—Freight Car Distribution Notice 15 of the Northwestern regional director orders that all shippers of newsprint paper be given full car supply for shipments of that class of paper.

The Steel Strike

THE strike of the organized steel mill workers which began Monday, September 22, has succeeded to the extent that it has tied up steel plants in the Chicago district, in the Mahoning Valley district of Ohio, at Cleveland, in the upper Monongahela Valley (Monessen and Donora) and in various other places, but it has failed in that it has not interfered seriously with operation of the mills in the Pittsburgh district which is held to be the strategic center in the situation. Conflicting reports have made it difficult to determine how many men are on strike or to how great an extent the steel industry has been tied up. It early became evident, however, that the strikers were composed largely of the unamericanized and uneducated foreign element and that even those plants whose operation was impeded most severely were handicapped principally by the walk out of their unskilled labor. Many of the workers, apparently, have not reported for work because they were intimidated and feared violence on the part of the strikers, rather than because they were on strike themselves. It is notable in the situation that in those districts, such as Pittsburgh in particular, where the protection on the part of the state constabulary has been at its best, the strike has proved the least effective.

There has been violence and shooting in a number of places, notably at New Castle, Pa., Buffalo, N. Y., Farrell, Pa., and McKeesport, Pa., but here and at other places where the constabulary was on hand the situation was quickly put under control.

The reports on Wednesday did not show any decided change in the degree in which the various districts were tied up or otherwise, except that in such places where the mills were operating the men were gradually beginning to return to work.

The district that seems to be tied up the worst is the Mahoning Valley district of Ohio. At Youngstown, three plants were compelled to suspend operations Monday and on Tuesday practically all the Mahoning Valley plants were idle. The secretary of the strikers' committee for the district claimed that there were 30,000 men idle in the city and 60,000 idle in the district.

In the upper Monongahela Valley, the plants at Donora and Monessen are closed and some 15,000 men are idle.

Reports Tuesday night showed that some 8,000 workmen in the Sharon-Farrell district of the Shenango valley were idle but officers of the steel plants expressed their opinion that only 1,000 were strikers, the rest being out of work through the shortage of unskilled labor and the resulting cessation of work. The Farrell works of the Carnegie Steel Company, however, are reported as running 100 per cent. There has been rioting in both Farrell and Sharon.

Cleveland is another district that has ceased operation to a large extent. Only two independent steel manufacturing concerns were reported in operation Wednesday, these being protected by contracts with the Amalgamated Association of Sheet and Tin Workers. The last of the Steel Corporation plants closed Thursday.

At Buffalo, it was reported that four plants affected by the strike had closed. The Lackawanna Steel plant closed Tuesday morning and the Donner Steel Company, Tuesday afternoon.

At Johnstown, some 15,000 men were reported out of work. The Cambria Steel plant is entirely idle, but the Loraine Steel Company is operating at about 85 per cent.

The mills at Coatesville are reported to be showing improvement as the men who were originally intimidated are returning to work. Operations in the open hearth departments of the Midvale Steel Company and the Lukens Steel Company were impeded at first but each company reported Tuesday night that it had succeeded in putting three additional open-hearth furnaces in operation.

The redeeming feature in the entire situation, however, is the Pittsburgh district. That center thus far has not been nearly as seriously affected by the strike as the other sections. Some men were out from the various plants, but not enough to impede operations seriously and there has been some disorder. By Wednesday, moreover, the situation had begun to improve and many of the plants reported that their men were gradually returning to work. The Edgar Thomson works of the Carnegie Steel Company at Braddock was able to blow in one blast furnace which had been banked and was operating at nearly 100 per cent although there was a shortage of unskilled labor. The Homestead works was also operating all its departments, although 25 per cent of the men were absent, these being mostly foreigners. The Duquesne plant and the Carrie furnaces at Rankin were also operating nearly at normal. The American Steel and Wire Company mills at Braddock, however, were idle and some 10,000 men out of work. At McKeesport, the National Tube and other plants were operating in part and some reported a gradually increasing personnel.

The Chicago District

Practically all of the big steel mills in the Chicago steel producing district, with the exception of those in Hammond, Indiana, have been closed down as a result of the strike. According to estimates prepared by officers of the steel workers' unions, between 75,000 and 80,000 men in this district are on strike and the walk-out has completely tied up the steel industry in the Chicago district. At the Gary, Ind., mills, the strikers, on leaving the plant banked the furnace fires but left some of the fluid steel in the furnaces which if the fires are allowed to go out will completely ruin them and may cost the steel companies one million dollars or more for repairs. The steam and operating engineers who have not been directly involved in the strike have declared their intention of remaining out as individuals although the international organization of their union has declared their strike unauthorized and has threatened to take away the charter of the local organization.

In South Chicago practically all mills have been closed and only small crews have appeared at the mills and at Joliet, Ill., it is reported that 95 per cent of the men have left their work.

Newspaper reports compiled from various steel producing points in the western territory indicate that plants have been closed at Anderson, Ind.; De Kalb, Ill.; Cleveland, Ohio; Columbus, Ohio; Canton, Ohio; Steubenville, Ohio; Denver, Colo.; Pueblo, Colo. In practically all of these places, however, the cessation of work was not general, some plants remaining in full blast and others operating in part.

The strike, being but a few days old, has not as yet affected the railroads to any extent. It is believed by many railroad officials that enough steel is on hand at the present time to fill the requirements of the railroads until the end of the strike and that no serious difficulty will be encountered because of the curtailment of the production of rails. Although officials of the railroad brotherhoods have given no indication of their attitude toward the strike, it is possible, according to some reports, that sympathetic action may be taken, insofar as handling supplies to mills affected by the strike is concerned. The car building plants and railway supply companies engaged in the manufacture of steel materials for the railroads have been variously affected by the strike, the Hammond plants of the Standard Steel Car Company, the American Steel Foundry Company, the Illinois Car & Equipment Company, the Keith Railway Equipment Company and others reporting that all of their men are at work and that production has not been curtailed. On the other hand the South Chicago plant of the American Brake Shoe & Foundry Company and the Indiana Harbor, Ind., plant of the American Steel Foundry Company has been closed.

Report on Railway Mail Pay in Canada

The Commissioners Recommend a Payment of 34.7 Cents Per Car Per Mile for Mail Car Service

By J. L. Payne

THE BOARD OF RAILWAY COMMISSIONERS has just handed down a report in the appeal of Canadian railways for an increased allowance for the carriage of mails. The matter had been at issue for seven years. In 1912 the primary demand was made, and in the year following a general adjustment was made by the post office department. This was not satisfactory to the railways, and, while accepted for the time being, the government was asked, if better terms could not be offered, to have the whole case referred to the railway commission for investigation and report. The outbreak of war occurred in 1914, and because of the resulting disturbance, as well as for other reasons, a hearing was not arranged until March last. In order that the case may be understood in all its bearings, it is necessary to pause for a moment or two and get the situation clearly in mind as it existed at that time.

In 1912 the railways appealed to the post office department for an advance of rates. At that date a somewhat mixed schedule was in operation. To the trunk lines was paid an allowance of from \$130 to \$160 per mile per annum. The branch lines were paid at the rate of 8 cents per car mile. In 1913 the post master general put the whole service on a uniform basis of 16 cents per car mile for full postal cars. Half cars were allowed 9 cents. For baggage car service, when over 30 feet of space was used, the maximum rate of 16 cents was granted; for from 15 to 30 feet 9 cents, and for less than 15 feet 4 cents. While accepting these new rates ad interim the railways, as I have said, put in a vigorous plea for increases on the broad ground of inadequacy. This was done by the Canadian Pacific and Grand Trunk specifically; but, of course, it was clearly understood that all railways were as directly concerned. In February last, on the recommendation of the post master general, the privy council referred the appeal to the railway commission "to determine as to the accuracy of the claims made by the railway companies, and, if it is found that the present rates are inadequate, to determine, as the result of evidence to be submitted by both parties, what would be fair rates of payment for the service." Those were the terms of the reference.

In order that a fair comparison may be made as between the rates in dispute in Canada and the rates which prevail in the United States, it is necessary to make clear the character of the service rendered by Canadian railways in return for the payments to which allusion has been made. This can be done in few words. Speaking broadly, and omitting only minor and relatively unimportant details, the railways provide the cars and keep them clean and in repair. The post office department does everything else, including practically all of the transfer work at terminals. The receiving of mails at depots and their carriage to post offices, and so on, are responsibilities which rest wholly on the department.

The Canadian Pacific led in the attack at the hearing, and W. J. Moule, assistant comptroller of that company, was the principal witness. He was effective. His command of data was excellent, and to this he added a modest and moderate attitude. There is a good deal in the character and bearing of witnesses, as I can say from a considerable experience as stenographer and reporter in court practice. The railways rested their case on the advanced cost of operation since 1912, and submitted an arbitrary segregation of operating expenses

as between passenger and freight service. At the bottom of this course was the contention that, inasmuch as the postal car was a part of passenger trains, it should earn its full ratio of operating cost per car mile. In support of this argument a considerable mass of data was presented, based on operating results for the preceding year. A summary of the facts thus introduced will be interesting, and must suffice for the purposes of this judicial statement of what took place.

For the statistical year 1918 the operating expenses of the Canadian Pacific were segregated as between passenger and freight service, and to each account a definite percentage was assigned. These ratios were moneyed out and reduced to a car mile basis. It would take up a good deal of space to give the statement in its entirety, and that is perhaps unnecessary. Mr. Moule, however, brought it down in the final analysis to 33.10 cents per passenger car mile. From this he made certain deductions, as for example in the case of maintenance, train supplies and so on, amounting in all to 2.52 cents, leaving the sum at 30.58. It was argued that to this should be added a certain percentage for taxes, fixed charges, dividends and common stock, having a total of 8.93 cents. The final sum would thus be 39.51 cents per car mile, or 38.25 in case the allowance of 2 per cent for common stock should be eliminated. It was the broad contention of Mr. Moule—and this constituted the essence of the case for the railways—that all the services in connection with passenger business should be considered as in effect, since advantage of the whole passenger service was taken by the mail service.

Mr. Moule did not, however, stop there. He showed that the cost of passenger service had been materially increased for that part of the statistical year 1919 for which definite information was then available. His calculations on the 1919 basis carried the operating cost per car mile to a figure well beyond 40 cents, and he maintained that heed should be given to the facts in that regard in the ultimate reckoning of a fair allowance for postal service, looking to the future.

In rebuttal, the department relied in large degree on the testimony of the writer. [Mr. Payne is comptroller of statistics for the government railway department.] Here again the practical aspects of the case do not call for an attempt to present even an epitome of the mass of statistical data which was introduced. He suggested that all calculations based on a segregation of operating expenses, as between passenger and freight services, should be received with reserve. They contained an obvious element of purely arbitrary assignment, as to which expert railway accountants were far from being agreed. The Association of Railway Accounting Officers, he pointed out, had definitely declared that an accurate separation of accounts on such a basis was impracticable. If, however, Mr. Moule's formula and deductions should be accepted, there still remained large ground for debate as to what subtractions should properly be made because of the manifestly special character of the service given by mail cars. For example, the outlay under the divisional head of traffic had no bearing whatever on postal service. A large number of other items attaching quite clearly to passenger train service had no connection with the mail car. Other accounts applied only in degree. No one knew or could know what volume or per-

centage of total operating expenses should be legitimately assigned to the postal service rendered by railways. He made a hypothetical summary of all accounts as to which doubt might exist and showed that they reduced Mr. Moule's calculation by 18.50 cents per car mile.

The witness went further. He showed that the postal car made large earnings at the prevailing allowance; that it was actually more profitable than some other passenger train cars, and that relatively it gave a higher net return than any car. He did not assent to the loose contention sometimes heard that earnings from mails were largely in the nature of velvet to the railways; but he did insist that it would be a mistake to charge postal cars with the measure of operating cost which might properly be assigned to some other passenger train cars. He could not say what deduction should be made on that account, but he argued that it was quite material.

The board, in deciding as between Mr. Moule and the comptroller of statistics, put a higher appraisalment on the calculations and arguments of the former; for their report and finding followed pretty closely his estimate of what the allowance for postal service should be. The commissioners were unanimous in suggesting that 34.7 cents per car mile should be paid by the post office department. "Giving due consideration to the averages involved," they say in their report, "and the element of judgment concerned in dealing with the question as to the proper participation of the mail service in general cost, it would appear not unreasonable that the rate accepted by the board for the kindred express service in the general express judgment should be adopted; that is, a rate of 34.7 cents for a full mail car mile. It would appear also not unreasonable that the charges for the other services set out in the order-in-council, as contained in the references to the board, should be increased in each case by the same percentage as the 34.7 cents rate represents over the 16 cent rate."

To this was added a memo to the effect that 34.7 cents per car mile should be regarded as the maximum rate, "subject to all bonus or statutory deductions." This latter qualification calls for a word or two of explanation. Practically all railways in Canada, except the Hill roads in the West, have received government aid in some form. In a number of instances the subsidy paid was made subject to certain services "if required by government," and to reservations for the carriage of mails. The matter is not clear, at all events not to me, and it may be that the railway commission will be asked for an interpretation.

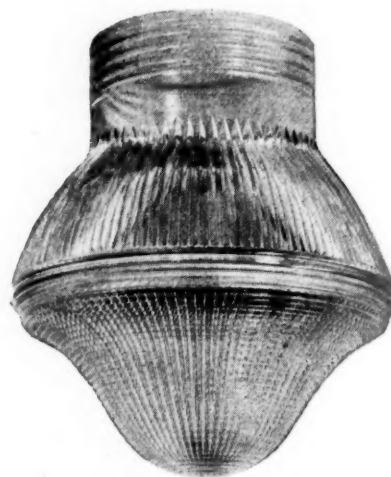
What does this report by the railway commission mean? In the first place, it does not necessarily mean that this is the end of the matter. The board was asked to make a report and not to give a judgment; and that report is not binding on the post office department. I have, from a sense of what would be proper, refrained from offering a single syllable of comment on the merits of the case as I have here presented it in this brief form, and I shall not presume to indulge in surmise as to what should or may be done; but I may at least state one or two facts relating to the effect of the recommendation made by the commission. If it is accepted, it, in the first place, means an increase of 117 per cent in the allowance now paid by government for the transportation of mails. In the second place, the monetary aspect of that increase carries with it an additional outlay by the post office department of several millions of dollars per annum. The railways of Canada earned \$3,288,734 from mails in 1918, and this sum would be more than doubled if the new rate of 34.7 cents per full car mile is given effect. To that extent the railways would add to the volume of their earnings. The significance of these figures is accentuated when it is pointed out that the revenues of the post office department from all sources for the last fiscal year were

\$21,602,712, as against an operating cost of \$19,273,583. An addition of \$3,800,000 on railway postal service account would create a deficit under present conditions.

Reflector Globes for Vapor-proof Lighting Fixtures

MANY LIGHTING FIXTURES in railroad buildings are subjected to gas and moisture conditions that call for the use of moisture and vapor-proof fittings. It has been standard practice in the past to equip vapor-proof lighting fittings with clear glass globes and in order properly to direct the light, it has been necessary to place a reflector over the glass globe. This procedure, however, did not produce a highly efficient lighting unit.

A combined vapor-proof globe and reflector has been designed by the Holophane Company, New York, in which



Globe Can Be Used with Any Standard Vapor Proof Fitting

it has used the well-known prismatic construction. Reflecting prisms are on the upper portion of the globe to redirect the light in downward directions and refracting and diffusing prisms are on the lower surface to distribute the light in different directions in the desired proportions, so that the resulting illumination of the work will be uniform. Tests show that the illumination is increased by 75 per cent over that given by an ordinary clear vapor-proof globe.

The globes are for use in connection with the standard vapor-proof fittings now on the market, including the standard Navy thread, and are made for the 40 and 60-watt type B lamps and for the 75, 100 and 150-watt type C nitrogen lamps.

Engineer Casualties Third Highest.—Only the infantry and the Signal Corps suffered heavier battle casualties in the war than the Engineer Corps, according to recent figures compiled by the War Department. Among each 1,000 enlisted men in the infantry reaching France there were 270 killed or wounded. Among each 1,000 in the Signal Corps the casualties were 50, and in the Engineer Corps 43.

Want Canal Service Restored.—Upon the opening of the Panama Canal regular steamer service was established between Atlantic and Pacific ports. This service was interrupted by slides, and has not since been regularly resumed. The California Manufacturers' Association now demands the resumption of this important service which, it claims, would tend to reduce rail rates on raw material.

Economic Span Lengths for Simple-truss Bridges*

Showing the Fallacy of the Old Criterion of Equal Superstructure and Substructure Costs

By Dr. J. A. L. Waddell

Consulting Engineer, Kansas City, Mo.

UP TO THE PRESENT TIME the general knowledge possessed by the engineering profession concerning economic span lengths for bridges has been rather crude and unsatisfactory. Until three decades ago the only data available on this subject were covered by the broad statement that the greatest economy in a bridge layout exists when the cost of a span is equal to the cost of a pier. In his pamphlet on "General Specifications for Highway Bridges of Iron and Steel," issued in 1888, the author pointed out the fact that the then popular impression concerning this question was incorrect, because the cost of the floor is constant, and hence the adjustment is one between cost of substructure and cost of metal in trusses and laterals. Three years later he gave, in a paper published by "Indian Engineering," a mathematical demonstration of the theory of the economics of bridge layouts, showing that the greatest economy will exist when the cost of a pier is equal to one-half of that of the trusses and laterals of the two spans which it helps to support. This demonstration was based upon the assumption that the piers rest on hard material and that, in most cases being of minimum size, they would not vary in dimensions or total cost for small changes in the span lengths.

This principle, though, is not applicable to the case of piers resting on sand or on piles, because the cost per lineal foot for substructure is often nearly constant for all moderate span lengths, while that for the superstructure augments; and this fact is not at all generally recognized by bridge designers. It has become evident of late to the author that there is needed by the profession a systematic investigation to determine in an authentic manner the economic span lengths for simple truss bridges to support the different kinds of live loads by piers resting on various types of foundation at all practicable depths, and to conform to changing market prices for materials in place.

The author has computed the actual costs of both substructure and superstructure for over two hundred cases of bridge layouts covering the following combinations: Railway, highway, and combined railway and highway bridges on concrete pier shafts overlying caissons or cribs resting on sand, bed-rock, or piles, and reaching to depths below low water of 50, 100, 150, 200, and 250 ft.; also for low, medium, and high conditions of the material market.

The following are some of the assumptions and conditions precedent adopted for the series of calculations:

Character of Structures

The different classes of bridges covered are double-track railway, single-track railway, standard highway, and combined double-track railway and highway, all metal being carbon steel (excepting in one set of estimates where nickel steel was employed), the railway floors being open, the highway floors being paved with creosoted blocks resting on a reinforced concrete base, the footwalks being slabs of reinforced granitoid, and the handrails being of steel.

All pier-shafts are of plain concrete. All caissons founded on sand are of timber with concrete filling having steel bases and cutting edges. In the pile

piers the piles are 75 ft. long and project 60 ft. below the bases, which are assumed to be 20 ft. high, the piles being spaced three feet center to center. The character of the materials passed through during the sinking is assumed to be the ordinary mixture of silt, quicksand, soft gumbo, and other river deposits, overlying either coarse sand, suitable for foundations, or bed-rock. The methods assumed for sinking the caissons are those of open dredging and the pneumatic process, the former being employed when the bases are to rest on sand and the latter when they are to reach bed-rock. In the case of pile piers, the open box is first to be sunk by dredging to the required depth, then the piles are to be driven inside of it, and finally the remaining space is to be filled with concrete.

The specifications for the designing of superstructure are those given in Chapter 78 of the author's "Bridge Engineering," and those for the designing of substructure are to be found in Chapters 39 to 43, inclusive of that treatise.

Unit Prices of Materials in Place

The following table gives the unit prices for materials in place assumed for the purpose of this investigation:

Materials	Condition of Market		
	Low	Medium	High
Structural steel, per lb.	4 cents	6 cents	8 cents
Concrete shafts of 20 ft. average thickness, per cubic yard	\$9.00	\$12.00	\$15.00
Mass of caissons, including all materials, for a width of 30 ft. and a height of 150 ft., sunk by open-dredging, per cubic yard.....	15.00	20.00	25.00
Mass of cribs, including enclosed pile-heads, per cu. yd.....	15.00	20.00	25.00
Portion of long piles projecting below base of crib, per lin. ft.	0.75	1.00	1.25

For the "Medium Condition of Market," the price per cubic yard of the shafts and for mass of caissons was modified by addition or subtraction from the price, depending on the width of the structure and the price of caissons was modified slightly for increases in height. Without these modifications of unit prices for substructure, the investigation would be not only illogical, but incorrect.

The prices per cubic yard for caissons sunk by the pneumatic process under medium market conditions, have been made two dollars greater than those for caissons sunk by open-dredging. This is due primarily to the more rapid sinking by open dredging, but also to the fact that the pneumatic caissons are generally filled solid, while the open dredging caissons often have their excavating wells only partially filled.

The price used for nickel steel superstructure in place for medium market conditions has been taken as 8½ cents per pound; for the reason that the last ante-bellum figures on structures, designed partially with that alloy, quoted to the author made the price of the nickel steel portion 2½ cents per pound higher than that of the carbon-steel portion.

Method of Determining the Economic Span Lengths

In making each of the cost estimates there was assumed a structure of indefinitely great length and unvarying profile, so that the sum of the cost of the steel work in a span and

* Abstracted from a paper presented before the Western Society of Engineers at Chicago on September 15, 1919.

the cost of a complete pier divided by the horizontal distance between adjacent pier centers gives the comparing cost per lineal foot of structure, although, as before indicated, not the *complete* cost thereof.

In the following table is given a résumé of the results of nearly all the cost computations that were prepared:

RÉSUMÉ OF RESULTS OF COMPUTATIONS

Character of structure	Character of Foundations	Depth of caisson footings, ft.	Economic span lengths, ft.	Remarks
Low-level Combined	sand	100	275	Shaft batter 1 in. to 1 ft.
Low-level Combined	sand	150	300	
Low-level Combined	sand	200	325	
Low-level Combined	sand	250	350	
Low-level D. T. R. R.	sand	100	275	Shaft batter 1 in. to 1 ft.
Low-level D. T. R. R.	sand	150	310	
Low-level D. T. R. R.	sand	200	360	
Low-level D. T. R. R.	sand	250	430	
High-level Combined	sand	100	275	Shaft batter ¾ in. to 1 ft.
High-level Combined	sand	150	300	
High-level Combined	sand	200	325	
High-level Combined	sand	250	350	
Low-level Combined	rock	50	250	Pneumatic caissons.
Low-level Combined	rock	100	300	
Low-level D. T. R. R.	rock	50	275	
Low-level D. T. R. R.	rock	100	325	
High-level Combined	rock	50	300	Pneumatic caissons.
High-level Combined	rock	100	350	
Low-level S. T. R. R.	rock	50	250	
Low-level S. T. R. R.	rock	100	300	
High-level Combined	rock	20	175	Pile piers.
Low-level Highway	sand	100	300	Shaft batter ½ in. to 1 ft.
Low-level Highway	sand	150	350	
Low-level Highway	sand	200	400	
Low-level Highway	sand	250	450	
High-level Highway	sand	100	325	Shaft batter ½ in. to 1 ft.
High-level Highway	sand	150	350	
High-level Highway	sand	200	375	
High-level Highway	sand	250	400	
Low-level D. T. R. R.	sand	100	350	Nickel-steel superstructure.
Low-level D. T. R. R.	sand	150	385	
Low-level D. T. R. R.	sand	200	425	
Low-level D. T. R. R.	sand	250	470	
Low-level Highway	sand	100	275	Shaft batter 1 in. to 1 ft.
Low-level Highway	sand	150	350	
Low-level Highway	sand	200	425	
Low-level Highway	sand	250	500	
Low-level D. T. R. R.	sand	100	290	Low-market unit-prices.
Low-level D. T. R. R.	sand	150	330	
Low-level D. T. R. R.	sand	200	375	
Low-level D. T. R. R.	sand	250	425	
Low-level D. T. R. R.	sand	100	275	High-market unit-prices.
Low-level D. T. R. R.	sand	150	325	
Low-level D. T. R. R.	sand	200	375	
Low-level D. T. R. R.	sand	250	425	

From a study of the preceding table there can be drawn the following deductions:

For all types of bridges the economic span length increases with the depth of foundation, though not necessarily in the same proportion.

The lighter the superstructure and the live load it carries, the greater generally is the economic span length, and the greater the variation of the latter with the depth of foundation.

For sand foundations there is not much difference in the economic span lengths for low level and high level bridges of the same type.

Structures with piers founded on bed rock generally have economic span lengths somewhat greater than those of the corresponding structures founded upon sand.

Single-track railroad bridges have economic span lengths a little less than those of the corresponding double-track structures.

Pile piers for high-level bridges involve, for economic considerations, rather short spans; and for low-level structures they usually necessitate such short ones as to require the adoption of plate girder superstructures.

In highway bridges having very deep foundations on sand, increasing the batter of the shaft augments the economic span length.

Using nickel steel instead of carbon steel in the superstructure increases materially the economic span length.

The assumed variations in unit prices with changing market conditions make very little difference in the economic span lengths. There would have been no difference at all had the prices of all the materials used been assumed to vary in the same proportion; but the superstructure steel,

erected, ordinarily changes in value somewhat more rapidly than does the substructure of the bridge.

There are not many irregularities to be found in comparing the diagrams or the tabulated results of the calculations; and what few exist are small. They are generally due to the adoption of a minimum weight limit for sinking to great depths instead of figuring upon employing temporary loading, as shown, for instance, by the substructure curve of Fig. 15.

The costs on which this table is based provide a check on the correctness of the old methods of determining economic span lengths, and from the variations between cost per foot of superstructure and cost per foot of substructure thus obtained, it is evident that the former rule for determining the economic span length is not reliable, especially for foundations at great depths; hence its use should be discontinued.

International Railway Association

UNDER THIS NAME the International Railway Congress is to be reorganized. The executive committee of the American Railroad Association has approved the plans for the new association, so far as these have been defined, and has voted to continue the membership of the A. R. A. in the international association. Mr. L. Weissenbruch, of Brussels, Belgium, the long-time secretary of the organization, has sent letters to the members throughout the world, in which he expresses the expectation that a date and place for a general congress will soon be settled upon by the Permanent Commission.

The International Railway Congress had its headquarters in Brussels. It is of many years' standing, but its life was in some degree dependent on a Royal Decree of September 22, 1911, under the terms of which the Belgian Government now holds that the organization must be dissolved. German occupation of Belgium forced the complete suspension of the activities of the officers, and suppressed the publication of the Bulletin of the Congress.

The property of the old association will be distributed among the members pro rata, according to their respective contributions during the last six years of the life of the Congress.

With the approval of a large proportion of the members of the Permanent Commission, an outline of the proposed new constitution, signed by V. Tondelier, president, and L. Weissenbruch, general secretary, has recently been sent to all members.

At the time of the suspension of activities the association included railroads in the following countries: Argentina, Belgium and Colony, Brazil, Bolivia, Chili, China, Costa Rica, Cuba, Denmark, Dominican Republic, Egypt, Ecuador, Spain, United States of America, France, Algeria, Tunis and Colonies, Great Britain and Ireland, India, Protectorates and Colonies, Greece, Haiti, Italy, Japan, Luxemburg, Mexico, Nicaragua, Norway, Paraguay, Netherlands and Colonies, Rumania, San Salvador, Serbia, Siam, Sweden, Switzerland, and Uruguay.

In many of the countries the railroads belonging to the association are wholly or largely government-operated, but the membership includes non-government companies in France, Great Britain, Italy and the United States; in France about 25 companies; Great Britain, 43; Italy, 19 (including tramways); United States, 56. There are also independent companies in Canada, India, Spain and Sweden.

The last list of officers shows 37 members of the Permanent Congress. Among the names are Stuyvesant Fish, E. J. Chamberlin, F. A. Delano, Theodore N. Ely (deceased), Fairfax Harrison, L. F. Loree, E. P. Ripley, Sir Guy Granet and Sir Frederick Harrison.

Hugh M. Wilson

HUGH M. WILSON, formerly associated with *The Railway Age*, and for several years its owner, and from 1910 to the early part of 1917 first vice-president of the McGraw Publishing Company, died Sept. 19.

Mr. Wilson was in journalistic work during practically his entire business life. He was born at Jacksonville, Ill., and his first experience was as city editor of the Jacksonville Daily Journal, after which he was a reporter on the Minneapolis Evening Star. In 1889 he entered the technical paper field on the staff of the Mississippi Valley Lumberman. From that beginning and with but one brief interruption he devoted his energy and abilities to the object of developing trade and technical papers. He soon entered the railway field and became an associate editor of the *Northwestern Railroader*. When that publication was shortly after consolidated with *The Railway Age*, at Chicago, he was made secretary-treasurer of the new organization. He subsequently became manager of *The Railway Age*, meanwhile continuing as secretary-treasurer, and was elected president of the company in 1899.

In these years, although busily engaged in the business department of the paper, he found much time for editorial work, particularly on news matters relating to the purchase of equipment and supplies. His familiarity with this branch of railroad work soon made him an authority and fitted him for the work he did as secretary of the Railway Supply Manufacturers' Association from 1897 to 1902.

His energy was perhaps best displayed by the publication during the International Railway Congress at Washington, in 1905, of a daily edition of *The Railway Age*, which was designated as the official journal of the congress. Supplementing the praise showered on him by both American and foreign delegates for the success of this enterprise he was created a chevalier of the Order of Leopold by the King of the Belgians.

In 1906 the Wilson Company, with Mr. Wilson as the controlling owner, was organized, taking over *The Railway Age* and the *Street Railway Review*, which had just then been purchased and which was changed shortly to the *Electric Railway Review* and from a monthly to a weekly publication.

Two years later Mr. Wilson sold both papers. *The Railway Age* was consolidated with the *Railroad Gazette* to make the present *Railway Age Gazette*, while the McGraw Publishing Company purchased the *Electric Railway Review* and consolidated it with the *Street Railway Journal* under the name of the *Electric Railway Journal*.

Mr. Wilson immediately went abroad for an extended trip, and on his return in June, 1909, was elected vice-president and a director of the Barney & Smith Car Company, Dayton, Ohio. He continued with the Barney & Smith Car Company until 1910, when he was elected first vice-president of the McGraw Publishing Company, which position he retained until January, 1917.

News of the death of Hugh M. Wilson will shock and sadden many persons in the railway and railway supply

fields. While Mr. Wilson had not been identified with the steam railroad and railroad supply field for over eleven years, he had a very wide circle of acquaintances and many warm friends in it who still remember favorably the work that he did in it.

He was distinctly a man among men. He was always bubbling with enthusiasm and overflowing with energy. It was impossible for anybody to come in contact with his bluff and magnetic personality without liking him. He was primarily a publisher, but as a publisher he was always interested in, and exercised a great influence over, the work of the editorial department. He always encouraged his editors courageously and outspokenly to advocate honest and public spirited policies, regardless of whether this course seemed adapted to increase or to diminish the prosperity of his papers. He advocated a vigorous policy of government regulation of railroads at a time when the desirability, and even necessity, of government regulation was by no means as generally recognized in the railroad field as it is now. As a publisher he was distinctly a builder, always being in favor of issuing the best papers practicable from an editorial and typographical point of view, even though this involved expenditures which might yield no immediate return, and, indeed, might never yield any return at all. He was in all respects one of the highest grade men who have ever entered the business paper publishing field in the United States. Both as president of the Wilson Company, and later as vice-president of the McGraw-Hill Publishing Company, he exerted an influence which has tended to raise permanently the ideals and improve the policies followed in the business paper field.

Mr. Wilson had a bad breakdown while he was connected with the McGraw-Hill Company. He went abroad and took a long rest and seemed to have largely recovered when he was struck by an automobile and seriously injured. While his breakdown and the automobile accident occurred some years ago, they undoubtedly produced the condition which ultimately resulted in his sudden death.



Hugh M. Wilson



Photograph from Underwood & Underwood, N. Y.

Scenes from Foreign Ports. A View of Port Arthur, Manchuria

Efficient Maintenance and Operation of Locomotives

Traveling Engineers Consider Methods of Handling Power on the Road and Care at Terminals

AN ACCOUNT of the early sessions of the Traveling Engineers' Association convention was published in the *Railway Age* of September 19, pages 581-585. The papers presented at the later meetings are given in part below:

The Advantages of Stokers on Modern Locomotives

Heretofore, in considering the application of mechanical stokers to locomotives we have thought in terms of the present only. In our opinion, however, the time is now at hand when we must consider future needs. Man power and wage costs are the dominating factors, and for economical operation we must use machinery to do the work that at one time could profitably be performed by hand. The economical rating of a locomotive is no longer the greatest tonnage it can drag over a division regardless of time, but the greatest tonnage it can haul over a given distance in a given time. This time has been fixed at eight hours for one hundred miles in freight service, which on account of delays en route may call for a speed considerably in excess of $12\frac{1}{2}$ miles per hour.

The ever-increasing cost of wages makes it necessary to get more work out of the machines, and we can therefore no longer limit the capacity of the modern locomotive to the capacity of the fireman to shovel coal, but must by mechanical means overcome the physical limitations of the man.

In the first place, the advantage to be gained by the application of stokers is the realization of maximum boiler capacity, not only through sustained periods, but at any time when needed. The necessity for using mechanical devices wherever possible arises, not only from a humanitarian standpoint, but more particularly where it is necessary to develop 100 per cent efficiency in each individual, and as this factor enters into the effectiveness of the locomotive more than any other part of railroad operation, it would seem that the human element with which we have to contend, if for no other reason, would be the strongest recommendation for the installation of mechanical stokers on all power that is kept in road service.

Years ago the capacity of the firemen at times governed the amount of work performed and not the capacity of the locomotive. There were two reasons for this: First, it is impossible to educate any two men up to a point where they will fire a locomotive exactly the same under all conditions and look ahead to be prepared for any emergency; second, the physical capacity of men to perform the work. The stoker makes it possible to have every engine 100 per cent effective. Of course the stoker is not automatic and it takes a certain amount of intelligence to operate it properly, but there can be no question but that there is a much larger field for fuel economy in its use than there has ever been in hand firing, regardless of what our method has been in educating our firemen in the past or how careful our supervision has been.

Every railroad officer has had practically the same experience in the work of firemen; namely, that in some instances it is possible to get full capacity out of the locomotive, while in other instances, even with experienced men, it is not. Therefore it is only fair to assume that the amount of work performed by any given number of locomotives in any given territory will be based on the average poorest firemen on

that division rather than on the average best firemen. With the engines equipped with mechanical stokers, receiving proper attention at terminals and by the men on the road, each will give identically the same service.

Steam chest temperatures in connection with superheated engines should receive much more attention than they have had in the past and there is no question but that a scientific job of firing largely affects steam chest temperatures when using superheated engines. On some tests conducted on a superheated engine it was demonstrated that it was possible to increase the steam chest temperatures from 20 to 50 deg. by expert firing, as compared with the work of the regular fireman on the job. Uniform temperatures in the fire-box, together with perfect combustion, will give the highest steam-chest temperatures possible to obtain, and as it takes a given amount of air to produce perfect combustion from a given amount of coal, and as the admission of air to the fire-box can only be regulated by the depth of the fire on the grate, it can readily be seen that in firing an engine by hand where the fire-door has to be opened to admit of the fuel charges, that the admission of air to the fuel bed through the grate must be intermittent, either too much when the door is closed or not enough when the door is open.

The stoker also makes it possible to carry the water at a lower uniform level than is possible with a hand-fired engine, for the reason that the steam pressure can be maintained at any time even though the engine is being worked to its maximum capacity through any sustained period.

In all the comparative tests that have been made between the stoker and hand-fired engines no one seems to have come to the same definite conclusion regarding fuel consumption, but from our experience we have found that in using the same grade of coal with the stoker and hand-fired engines, the boiler capacity of the engine not only is increased to a great extent as far as handling tonnage is concerned, but that it makes it possible materially to reduce the running time between terminals; therefore, with the present stoker in its perfected form, it should not only show much greater efficiency than a hand-fired engine, but also effect a very material reduction in fuel consumption, based on the consumption per ton mile per hour.

There seems to be considerable stress placed on the stack losses of some stoker-fired engines due to the extremely fine quality of coal necessary to use on them. While it is true that in the past considerable loss occurred from this source, with the present perfected stoker and the brick arch extending well back to the door sheet, the stack losses can be reduced to a point nearly as low as is done by using run of mine coal hand fired. In some large Mikado type engines, where originally they used six bricks in the arch, the arch was extended two bricks further back, bringing it up to within about seventeen inches of the crown-sheet. This not only has made a saving in stack losses, but has almost entirely eliminated the smoke, and we believe that with an arch of this kind and a large combustion chamber it would be possible with careful manipulation to burn 98 per cent of all fuel in the fire-box.

Today the firemen are presenting a demand for another increase, and in addition to this are requesting that all engines above a certain limit be equipped with mechanical stokers, and all under that limit be equipped with mechanical coal passers and grate shakers. Considering the cost of the mechanical coal passer and grate shaker, it would seem that

it would be much better to take the money expended in this way, apply it to the stoker and equip all engines kept in road service with a stoker.

While committees reporting on this subject in the past have never been able to secure reliable information in regard to stoker maintenance cost, records for the past five years show our maintenance cost to have been a little under \$10 per thousand miles. As to the miles per engine failure due to stoker trouble, the record of the El Paso & South Western show an average of 61,556 miles per stoker failure. The application of stokers on this line has entirely eliminated the stereotyped engineers' report of "engine not steaming." While as a rule the size of nozzles has not been increased, it has been possible to adopt a standard front end and make all engines give a uniform service as far as steaming is concerned without any complaint from engine crews. It was never possible to get any class of engines to steam alike when hand fired. One fireman will want a bridge in the nozzle, while another wants it out; one would want the draft-sheet 15 in. from the bottom of the arch, while another wanted it 21 in.; one would want the petticoat adjusted one inch above the nozzle, while another man would want it six inches. With the stoker, however, practically no work on front ends is necessary by the roundhouse force except to make regular inspections.

Let us not forget that the fireman of today is the engineer of tomorrow, and owing to the constantly increased coal burning capacity of the locomotive, the application of a mechanical means of supplying the fuel is the only thing that will make the work sufficiently attractive to enable us to get and keep the right kind of men on our engines.

The report was signed by E. Gordon, chairman, J. A. Cooper, A. N. Willsie, J. O. Clendenen and J. R. Bissett.

Handling Locomotives to Secure Efficiency and Fuel Economy

The essential requisites to locomotive efficiency are proper design, proper operation and proper maintenance of power, the matter of fuel economy always being closely related to any of the three. The matter of proper design should start with having the boiler and grate area designed of ample proportion to furnish enough steam to develop the maximum cylinder horsepower of the cylinders at all times. Some of the older boilers are of rather low capacity for the cylinders of the engine, but in late years there has been a decided tendency toward having 100 per cent boilers. Every modern locomotive should be equipped with superheater, brick arch and power fire-door; all of which are fuel-saving and capacity-increasing devices. The combustion chamber also makes for fuel economy and is now in successful use on most large locomotives. The mechanical stoker should be applied to all large engines, and although the conditions under which the engine is to operate would govern, generally speaking, engines with over 50,000 lb. tractive power ought to be stoker fired.

Air compressors and headlight turbines of modern and most economical design should be used on new power, and on some old power it will be found in the interest of economy to replace existing auxiliaries with the more economical outfits. There are some as yet undeveloped sources of fuel economy for locomotives, one of which, the feed water heater, while still in the experimental stage, will undoubtedly soon be perfected and put in more or less general use.

In designing the engine, front end, grates and ash-pan should be given plenty of attention. It is necessary to keep the air out of the front end, and yet admit it in plenty to the ash-pan, which means ample ash-pan air openings and all joints tight around the front end. The effect of front end leaks and also insufficient ash-pan air opening has been

made the subject of circulars recently issued by the United States Fuel Section, which have brought out very plainly the losses due to these two causes. The exhaust nozzle should be made as large in diameter as possible, so as to reduce back pressure and yet furnish the draft required to produce proper action on the fire. The grates should have ample air opening and the grate rigging should be such as to permit shaking freely by the fireman, which cannot be done if too many sections of grate are carried on one shaker.

Essentials for Proper Operation

The proper operation of locomotives covers many phases and only a few of them will be touched on here. It is recognized that where locomotives are pooled they are not so well maintained, as the engine crew does not take the same interest in an engine that they may not see again for a month; and they do not make the lighter repairs, nor the thorough inspection and report of defects occurring en route which they do in a case of the regularly assigned engine. Although it may be more economical in general to use pooled engines, particularly when business is heavy, there are instances where regularly assigned engines could be used, and it is preferable to do so when consistent.

Locomotive performance is affected to a considerable extent by the terminal facilities. Terminal facilities may often include various fuel or labor-saving appliances, but these are not always installed in co-ordination with other appliances at the same terminal. Proper terminal layout should be such as to get the quickest movement into and out of the engine-house of engines arriving at and departing from terminals. Considerable fuel is lost, the expense of handling the engine is increased, and there are many delays due to improper design of terminals. In the past we have been rather shortsighted as regards designing locomotive terminals with a view of handling increasing sizes of power.

One question in the operation of trains and locomotives that is very important and is not as a rule given much attention is the matter of proper water supply. Wherever it is possible to change an existing water supply for one of better quality, it should be done, providing the cost of the change is not prohibitive, and then, having obtained the best available water, every water should be given the necessary treatment to prevent scale formation and corrosion within the boiler. We are all familiar with the many troubles that result from using hard waters. Fuel lost from having scaled heating surfaces is a large expense; boilers operate at reduced efficiency when scaled up; engines fail and give up trains on account of flues leaking, and the cost of boiler maintenance is much higher on account of frequent flue, stay-bolt and fire-box renewals. Most all this can be avoided. Engine failures due to leaking can be reduced to practically nothing; stay-bolt trouble can be reduced to a minimum, and considerable fuel will be saved with the proper treatment of all waters. This should be done on every railroad, and the steam user who does not adopt some method of water treatment to avoid incrustation is unprogressive and is losing money.

MAINTENANCE OF MACHINERY AND BOILER

Proper maintenance depends first on proper inspection and then on getting the defects corrected which are brought out by this inspection. The pooled locomotive can be run successfully and efficiently if there is adequate terminal inspection and repair. Not infrequently the officer in charge of the terminal is under the impression that the only inspection necessary is searching for loose nuts, missing parts of machinery, cracks, hot bearings, etc., and consequently uses rather low-grade men for this purpose. The best man on the job is none too good for inspection, as a locomotive ought to be tested for steam blows, pounds and such defects as

cannot be observed by the eye alone. Steam blows, such as are caused by defective cylinder packing, valves and valve rings, go further toward reducing the efficiency of the locomotive, and waste a great deal more coal than is generally realized.

If the inspection and repair of locomotives were carried out in accordance with federal inspection laws, pretty good results would be secured; but even though the spirit is to comply fully with these laws, it is unfortunate that there is still at times considerable neglect or rather inefficient inspection and repairs. All repairs found by the inspector ought to be made, and when possible a check should be made before the engine leaves to see that all work has been done.

A few items of maintenance, or shop practice, that might be mentioned are care in laying out shoes and wedges, and proper maintenance of binders, tramping of engine trucks, drivers and tender trucks, and the fastening of valve bushings so that they cannot move, making it possible to use standard rings for all engines of a class. It will frequently be found that the steam distribution is not correct for engines of the same class, due to slight differences in the position of the valve bushing and size of valve rings used.

Perhaps one of the most important items of maintenance is the proper care of superheaters and superheater flues. The superheater is the greatest fuel-saving device, and as the saving in fuel depends on the amount of superheat, it follows that any obstruction which prevents free passage of the hot gases around the superheating units will result in a reduction in superheat and a corresponding reduction in the efficiency. It does not take many trips for superheater flues to become stopped up and unless constant attention in the way of blowing them out in roundhouses is given superheaters will be found only saving perhaps 50 per cent of what they should when properly maintained.

FUEL DEPARTMENT ORGANIZATION

Although fuel economy depends on proper design, proper operation and proper maintenance of power, it is necessary in order to get real results to have a separate fuel organization. This should consist of a general staff officer, in charge of fuel conservation, who should devote his entire attention to the conservation of fuel on locomotives, in shops, at terminals, water stations and for all miscellaneous purposes. He should also have jurisdiction over the quality, preparation and uniformity of coal furnished. It is important that the cleanest grade of coal should be obtained from each mine in the district from which the fuel supply comes, and a vigorous inspection should be maintained to see that the railroad gets what it is paying for in this respect. Mine weights should, of course, be checked at certain prescribed intervals to know that accurate weights are being obtained.

To carry out his plans, the general fuel officer should have divisional fuel supervisors, who should be assigned a certain territory for all the various details of fuel economy, but whose principal duty should be the education of firemen in the economical firing of engines. The fuel organization should have enough clerical assistants to keep up-to-date records of fuel performances by individual engine, by engineer and by fireman, so that performances on any division can be known and examined at any time. These records give means of locating the cases where an engine or an engine crew is operating wastefully, and they also show what progress is made in saving fuel.

Co-operation with the operating department is, of course, very important. Monthly divisional fuel meetings should be held with the superintendent, master mechanic, divisional officials and such employees as can consistently attend. At these meetings progress reports are made, conditions are analyzed and suggestions invited from all present as to where improvements in engine or train operation can be obtained.

General fuel officials should attend these division fuel meetings as often as possible, but the superintendent should be the chairman of the divisional fuel committee and conduct the meetings, as this brings about a more thorough and more uniform understanding of the importance of various matters effecting fuel economy by operating officials who otherwise might overlook some of the details and leave it up to the mechanical department. The minutes of these fuel meetings should be furnished to the general manager, general superintendent, superintendent of motive power, general fuel official, division superintendent, and master mechanic.

Any progressive movement must be backed by educational efforts and great stress is laid on the necessity of constant education of enginemen particularly, as they, of all employees, are most responsible for the coal pile, and also of all others who in any way may be concerned in the use or waste of fuel.

The report is signed by J. B. Hurley (Wabash), chairman; Robert Collett (U. S. R. A.); F. P. Roesch (U. S. R. A.); B. J. Feeny (U. S. R. A.); and G. E. Anderson (Gt. Nor.).

DISCUSSION

W. G. Wallace (American Steel Foundries) emphasized the importance of having a record of the coal consumption immediately available at the end of each trip. If this information is given to the train dispatcher at the end of the run, it makes it possible to check up the coal consumption, taking into account all the conditions surrounding the trip. This helps greatly in fixing the responsibility for excessive fuel consumption, whether it is due to the operating conditions, the mechanical condition of the power or the quality of the coal. E. Hartenstein (C. & A.) mentioned the losses due to slow orders and unnecessary stops. He also touched on the qualifications of locomotive inspectors and stated that men who had received their training in road work were often better qualified than men from the shop. V. C. Randolph (U. S. R. A.) called attention to the important part which the locomotive engineer must play in securing economy in the use of fuel, and advocated that these men should be taught how to operate the engines at the greatest efficiency. Among the common wasteful practices he mentioned especially working the locomotive harder than is necessary. H. C. Woodbridge (U. S. R. A.) stated that irregular action of reverse gears was often responsible for excessive fuel consumption and expressed the opinion that it is necessary to make improvements in these devices. A. G. Kinyon (Fuller Engineering Company) advocated a fuel department organization reporting to the chief executive officer. He brought out that instruction must be supplemented by adequate supervision to get the best results. B. J. Feeny (U. S. R. A.) stated that too much attention is given to accounting for oil and far too little attention to fuel records. He also emphasized the fact that the responsibility for saving fuel extends to all departments.

Caring for Locomotives at Terminals to Secure Efficiency and Increased Mileage

Assuming that the locomotives come from the shops in a condition to readily develop the state of efficiency for which they are rated, the efficiency that can thereafter be maintained and the mileage obtained, will depend largely upon the thoroughness of the work done upon the locomotive during general overhauling periods. The limited facilities of the average terminal plant should neither be required nor expected to make good the shortcomings of the general repair shops.

Increased mileage is but another term for maintenance of a high efficiency, as it pre-supposes less delay along the line due to locomotive troubles, quicker turning at terminals for

service and a greater number of trips between shoppings. The efficiency of the practices in use at terminals, the extent of the facilities available for doing work and the excellence of the work done will in a general sense determine the measure of efficiency that can be expected to be maintained at such places. It follows that a constant striving for the betterment of practices, of facilities and of workmanship, are the essential needs at terminals to maintain locomotives in an efficient state and to increase the mileage obtainable. The traveling engineer should be of valuable assistance to those in charge of terminals in bringing these betterments about.

The question as to what are the best methods of caring for locomotives at terminals is synonymous with, what constitutes good roundhouse practice?

Studied from any angle, these two questions constantly intermingle and seemingly resolve themselves in every case into the same identical set of fundamental requirements which, in turn, constitute equally the basic principles of good roundhouse practice and the essential necessities of locomotive maintenance.

These requirements are: Caretaking inspection of the locomotive by competent locomotive inspectors as soon as possible after arrival at terminal; the obtaining of an intelligent report from the incoming engineer as to the conditions noted during his trip which were detrimental to the efficient operation of his locomotive; the proper cleaning of the fire, ash-pan and front end, and attention to the fire and water while lying at the terminal; a careful inspection by competent workmen of the troubles and defects as reported by the engineer and locomotive inspectors and the making of the necessary repairs and changes in an efficient manner; the furnishing of the proper engine tools and the necessary supplies for the outgoing trip, which will include filling of lubricators and rod cups; frequent riding of the locomotives by the traveling engineer, especially in cases of trouble, the cause of which is in doubt and usually due to a combination of adverse conditions.

With the exception of the last mentioned point, these requirements are incidental to every trip in either direction where inspection and repair facilities are provided for at each terminal. The maintaining of the least reasonable condition of efficiency demands that these requirements must be provided for and carried out at least at the end of each day's work, and is required by the Interstate Commerce Commission rules.

In addition to the points already mentioned, provision should be made for periodical inspections not usually covered in work reports, which will include boiler washing, boiler inspections and inspections of the operating parts enumerated later on; for the carrying in stock of needed supplies of all kinds for making the repairs and for renewals, and for shop equipment and tools necessary for reasonable running repair maintenance.

ENGINEER'S REPORTS

Inasmuch as there are certain troubles and defects which may have an important bearing on the efficient operation of the locomotive, such as steam blows, pounds, and conditions affecting the steaming properties, which are only discernable when the locomotive is working, an intelligent report from the engineer as to the detrimental conditions noted while running, is of the greatest importance in connection with good maintenance.

There is scarcely a way in which the traveling engineer can be of more use to the mechanical department and be of greater aid in assisting to keep locomotives in an efficient condition than in seeing that engineers' work reports are made out in such a manner as to clearly indicate the part complained of, the nature of the defect to be corrected, the cause of trouble experienced, and in cases where a definite

cause cannot be given that the report describes just what takes place.

LOCOMOTIVE INSPECTION

The Locomotive Inspection Bureau of the Interstate Commerce Commission has issued rules governing the inspection of locomotives which embrace practically every feature of importance requiring either daily or periodical attention, and including limitations of wear permissible for certain parts. These rules are based upon the practical experience of both the Federal Inspectors and representatives of the most important railroads of the country, and failure to live up to them constitutes a violation of the law.

Carried out in the spirit intended, they stand for good maintenance. Where observed, however, only within the letter of the law, a high state of efficiency is not necessarily indicated, as many of the rules do not cover the best conditions obtainable, but rather the poorest allowable, and the limitations below which it is not permissible to go. The efficiency obtained will therefore depend upon the spirit in which these rules are followed out. The inspection should be thorough and painstaking, inasmuch as defects that result in delays, breakages and failures, are frequently discernable only under the closest scrutiny.

In addition to those parts to which attention is called by the rules referred to, every part subject to wear that would interfere in any way with the efficient working of the locomotive and all parts subject to severe strains, breakages, or loosening effects, including nuts, keys and cotter pins, as well as the condition of all safety appliances, should receive attention. It is a good plan to have an outgoing inspection, covering conditions of air brakes, injectors, electric headlight, and power reverse gear, and for the examination of such parts of the locomotive as were reported for shop attention.

Where for any reason the fire is dumped at the terminal, suitable provision should be made for the inspection and testing of steam and air-operated devices, such as the air brakes, injectors, electric headlight, power reverse gear and similar devices, while still under sufficient steam pressure to operate such parts. This guards against defective conditions in such parts, gives opportunity for repair if any defects are found, and in the case of air brakes, provides for the testing and adjusting of piston travel within proper limits.

All locomotives should be cleaned in order to facilitate the work of inspectors and shop men.

SHOP FACILITIES AND TOOLS

Where the facilities of a general or so-called back shop are not readily accessible, adequate means for doing light repair work of a reasonable nature should be provided in the way of a small machine and blacksmith shop. This should contain at least a lathe, a small shaper, a drill press, a press for pushing bushing in and out, a blacksmith forge and a grind-stone. Such a plant is almost invaluable, providing, as it does, for both quicker and better work as well as assisting in cutting down the cost of maintenance. Arrangements should also be made for a liberal supply of tools in everyday demand, such as drills, taps, reamers, dies, files, wrenches, pipe fitters' and boilermakers' tools and others of like nature not usually provided by the workmen themselves.

The building of larger and heavier locomotives and the increased weight of various parts which have to be handled, demand the more or less constant use of portable cranes, jacks and block and fall, and the same should be provided for quick and safe work. An electric or other type of welding machine has also become practically a necessity in terminals of any size.

SUPERVISION, QUALIFICATION AND METHODS

Competent supervision over mechanical activities at terminals is a most important factor in efficient locomotive

maintenance. Men for these positions should be chosen with particular regard for their general fitness in reference to experience, good judgment, foresight and resourcefulness, as well as for their ability to handle men. Frequently located at points distant from any large terminal through which immediate assistance could be procured, often with poor facilities for doing work and none too competent help, their success or failure depends largely upon their own capabilities and they find a constant demand for the exercise of each of the qualifications mentioned.

Resourcefulness is constantly in more or less demand in devising ways and means to meet the varying conditions incidental to running repair work and in overcoming the unexpected requirements and emergencies that are constantly arising. It may well be added that the interest taken in the work by the supervision will be a dominating feature in the results achieved. Not only should the methods of the workmen be generally watched to prevent loose methods and bad practices creeping in, but the completed work should be frequently examined as a guard against poor work and carelessness.

TURNING POWER

It must not be overlooked that features other than the maintaining of an efficient locomotive enter into the matter of increased mileage and that insofar as they have to do with the care of the locomotive while at terminals, they must be given due consideration in connection with terminal work.

Increased mileage necessarily implies a greater number of trips to be made between shoppings than previously averaged.

Conditions at terminals which interfere with the promptness with which locomotives may be reached for the purpose of making needed repairs and for being otherwise prepared for a quick return to service, tend to prevent increased mileage.

It is usual to consider the cleaning of fires, the obtaining of coal and water and the turning of the locomotive as adjuncts to the maintenance and care of power. The extent of the provisions made for doing this work and the ease with which the locomotive can reach the points where the work is to be done, is most important in the quick turning of locomotives, and as a means of bringing about increased mileage. Lack of adequate provisions in this respect slows up terminal movements, hinders getting at the locomotive promptly to make the needed repairs, tends to hurried repairs and to work being left undone. If frequently leads to badly congested conditions and serious delays, and fosters carelessness in the various stages of preparing the locomotives for return to service on account of the necessity of crowding them through the terminal in order to turn them with any degree of promptitude, and in general results in poor conditions and delays, neither of which is conducive to increased mileage.

Poor facilities in this respect are especially troublesome at terminal points where more or less severe winter weather is experienced and where during such periods they may be the cause of power conditions becoming very serious.

In this connection it may, therefore, be pointed out that the trackage about terminal plants insofar as it provides for prompt and free movement of the locomotive in conjunction with cleaning fires, obtaining coal and water, getting to and from the turntable and in reaching and departing from the shop, is important in giving more time for the making of repairs and lessening the time required for preparing the locomotive for despatching. In a like manner the adequacy of the provisions made for cleaning the fires, for inspection purposes and for coaling, have an important bearing on the time required in doing such work and on that necessary in getting the locomotive otherwise ready for service.

RESPONSIBILITY OF THE TRAVELING ENGINEER

The duties of the Traveling Engineer are of such nature as to place upon him a considerable share of the responsibility for the maintenance of the locomotive over which he has nominal control. Being in constant touch with all the conditions that enter into their handling both at the terminals and on the road, he cannot well evade such responsibility.

In various ways as through casual inspection of methods used and work being done when he is around terminals, through riding the locomotive, through investigation of delays and failures and through his contact with the locomotive crews, it is within his power to know just what conditions are prevailing with reference to maintenance. He has the means of knowing whether his engineers are making intelligent reports or not by occasionally looking over their work reports. He has the means of knowing by personal observation and by information gained from delay and failure reports whether inspectors are competent and painstaking in their work or not. Being around terminals for a time at least, daily, he should know whether or not fire, ash-pan and front end cleaning is being done properly, and the locomotive cared for in a proper manner while laying over. He should know by the results obtained as well as by the complaints of the locomotive crew, by his personal experience in riding and by results of investigation of delays and failures whether the work being reported is being properly done or neglected. He can easily ascertain what is done in reference to boiler inspection during boiler washing periods and to other parts during periodical inspection.

In the extent to which he avails himself of this information which is always at his command, and the use to which he applies it in assisting to maintain efficient conditions, or in aiding to bring them about, where such are not of the best, will lie the measure of his share of the responsibility for the conditions which exist. It is scarcely sufficient that he is able to say in explanation of poor conditions, delays and failures, that the work required to better conditions was reported. To be relieved of his share in the responsibility for poor conditions he must be able to show that he made use of all the means within his power to bring about a betterment of conditions. It comes well within the scope of his authority to take up, consult and advise with those in charge of terminals as to conditions which come within his observation that are detrimental to maintenance and efficiency and in regard to which improvement may seem possible.

He will almost invariably find that the information and advice that he can offer as the result of his observations and experience will be most gladly received. As a rule the terminal authorities are more given to complaining of the lack of assistance given them by the traveling engineer than in regard to his insistence on better conditions. He who offers friendly advice and assistance is ever more welcome than he who criticises without offering a remedy.

The traveling engineer should take particular interest in the prevention of operative practices which tend to decrease locomotive efficiency, such as moving engines without opening the cylinder cocks, with its ill effects on cylinder and piston rod packings and the slipping of locomotives in starting them, with its general racking strains.

The report is signed by T. F. Howley, chairman, Joseph Keller, B. J. Feeny, C. W. Corning and J. W. Burrows.

DISCUSSION

W. H. Gallagher (M. K. & T.) advocated a method of adjusted tonnage rating as a means of securing greater efficiency from locomotives. E. R. Boa (N. Y. C.) brought out the necessity for co-operation between the traveling engineer and the roundhouse foreman. F. L. Pierce (C. & A.) described a method of inspection of outgoing engines by traveling engineers which had brought good

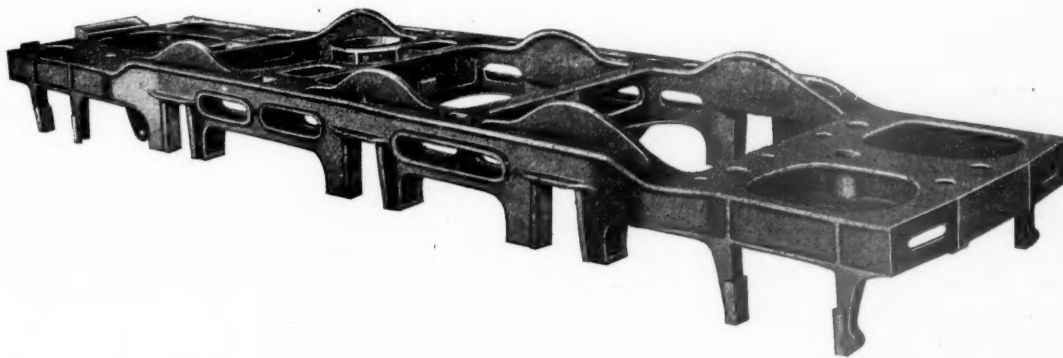
results. E. F. Boyle (Sou. Pac.) spoke of the damage to locomotives resulting from improper operation by hostlers, who often moved the engines when the cylinders were filled with water. B. J. Feeny (U. S. R. A.) stated that while good facilities were necessary to secure the best results, a fair degree of efficiency could be secured by giving attention to simple matters which required no elaborate equipment, such as blowing tubes and cleaning grates, as these matters have a great influence on the operating results secured with the engines. W. L. Robinson (B. & O.) mentioned the abuse of locomotives by incompetent hostlers, and stated that traveling engineers should have authority over these men and should instruct them in the proper method of handling engines.

E. S. Boyle (Sou. Pac.) stated that, as a rule, if all the work reported by the enginemen is done, the motive power will be kept in fairly good condition. It is, however, necessary for the traveling engineer to see that the men do not fail to report necessary work. He advocated occasional joint inspection by the traveling engineers, gen-

One-Piece Cast Steel Frames for Electric Locomotives

A NOTABLE EXAMPLE of the large and intricate parts which are successfully made of cast steel is the bed casting for the latest order of electric locomotives built for the New York, New Haven & Hartford. In designing this locomotive, the weight of the built-up frame was found to be so great that the total weight would exceed the allowable limit. For that reason the Commonwealth Steel Company, St. Louis, Mo., was asked to submit a design. The general plan for such a casting had been worked out by the company's engineering department, but the 10 beds for the New Haven locomotives were the first to be made.

The locomotive bed is 32 ft. 4 in. long, weighs 17,000 lb. and is probably the most difficult casting of its kind ever attempted. This single unit replaces a very large number of parts, greatly reducing the weight and increasing the



One-Piece, 17,000-Pound Steel Bed Casting for New Haven Electric Locomotive

eral foremen and master mechanics to check up the engineers' reports.

A resolution was passed stating that it was the opinion of the association there should be responsible engine inspectors and night roundhouse foremen at all engine terminals.

Other Business

At the session held on Friday, the report of the committee on amalgamation with the American Railroad Association was received and discussed. The committee stated that in view of the fact that the duties of the traveling engineer were not strictly mechanical work nor transportation work, but a combination of the two, it believed that the best results would not follow from amalgamation as a division of either the operating section or the mechanical section, but by the creation of a separate section to take over the activities of the Traveling Engineers' Association. This course had been suggested to the officers of the American Railroad Association, but no answer had been received, and in view of this situation the committee was continued.

The by-laws of the association were amended to leave the selection of the place of meeting entirely in the hands of the executive committee.

The following officers were elected: President, G. A. Kell, Grand Trunk; first vice-president, W. E. Preston, Southern; second vice-president, L. R. Pyle, Railroad Administration; third vice-president, E. Hartenstein, Chicago & Alton; fourth vice-president, J. H. DeSalis, New York Central; fifth vice-president, E. F. Boyle, Southern Pacific; secretary, W. O. Thompson, New York Central; treasurer, David Meadows, Michigan Central; members of executive committee, F. P. Roesch, Railroad Administration; B. J. Feeny, Railroad Administration; J. Keller, Lehigh Valley.

strength. Numerous bolts and nuts have been eliminated that become loose and allow play, especially at the pedestals. This will result in a considerable saving in the cost of maintenance and repairs. This locomotive bed strikingly illustrates the adaptability of cast steel to certain types of construction. It not only provides an irregular contour of members for clearance without sacrificing strength, but also facilitates securing various cross sections of all members, correctly proportioned in size to correspond with various stresses, at the same time providing the required flexibility in the structure.



Photo Copyright by Underwood & Underwood, N. Y.

Women Section Hands Working on Railroad Line on the Mumansk Front

I. C. C. Recommends Consolidated Classification

Decision Follows an Extensive Investigation. Dissenting
Opinion by Commissioner Woolley

IN A REPORT signed "by the commission," the Interstate Commerce Commission recommends to the director general of railroads a consolidated classification to be adopted in place of the present official southern and western classifications by railroads under federal control. The commission finds that this consolidated classification is also reasonable for application by roads not under federal control. The commission says in part:

In our annual reports to Congress we have from time to time mentioned our efforts to stimulate work in the direction of greater uniformity in freight classifications. Early in 1918 it was apparent, in view of the progress already made, that a complete unification of the rules and descriptions of articles in the official, southern, and western classifications was possible at a not distant date, and we accordingly inquired of the carriers why they could not by January 1, 1919, or sooner, effect a consolidation of the three general classifications into one volume containing one set of uniform commodity descriptions with three rating columns, one for each territory, subtended, and with one set of general rules. Shortly thereafter the director of traffic of the railroad administration, after conference with us, appointed a special committee of experienced classification men to carry out the work he had in mind. This committee prepared and submitted a volume entitled "Proposed Consolidated Freight Classification No. 1," which accomplishes the consolidation and uniformity sought, and, in addition thereto, proposes many increases and reductions in ratings, most of which, however, have no necessary connection with the work assigned to the committee. The volume was not filed with us as a tariff schedule.

The director general requested that we make an investigation and give him our recommendations relative to the advisability of adopting it for application by carriers under federal control. We accordingly instituted this proceeding of inquiry and investigation into the reasonableness and propriety of its provisions. We made respondents all of the carriers subject to the act and which were not under federal control, in order that the same classification might, if that course were found advisable, be prescribed for their use also. The special committee distributed about 14,000 copies of the volume among carriers, state commissions, interested shippers and shippers' organizations throughout the country, each copy accompanied by a notice of this proceeding. Hearings were held at Boston, Mass.; New York, N. Y.; Chicago, Ill.; Omaha, Neb.; Portland, Ore.; San Francisco, Cal.; Denver, Colo.; Fort Worth, Tex.; New Orleans, La.; Atlanta, Ga., and Washington, D. C. Nearly 15,000 pages of testimony were taken and over 800 exhibits were filed. The evidence of objectors or protestants was generally confined to the proposed increases, changes in the nature of increases, and new items. In other words, objections to a particular item were not heard unless the item proposed to put some new or added burden upon shippers. Most of the evidence relates to the increased ratings. The consolidation of the classifications and the unification of the rules and descriptions, generally speaking, were received with favor.

As we understand it, the consolidated classification was proposed as a general standard classification to supersede not only the existing issues of the official, southern, and western classifications, but also all state classifications, and at the request of the director of traffic we have received evidence as to the general effect of canceling the various state

classifications. That evidence will be referred to later in the report. We were advised by the director of traffic that he had under consideration also the advisability of canceling the exceptions to all classifications, but that commodity rates might be established in lieu thereof in proper cases. That matter, however, has not been referred to us for investigation and recommendation.

The consolidated classification is not a uniform classification in the full sense of the term, because all the ratings are not uniform. In a majority of the items, the ratings are the same as now. The consolidated classification would preserve the identity of the official, southern, and western classifications, and, as finally amended, is intended to be filed with the Commission, with a separate I. C. C. number for each territory. In other words, from a legal or technical standpoint, it is to be three classifications in one volume. It is not much larger and is no more complicated than any one of the three general classifications now in use.

The consolidated classification is the result of effort toward uniformity extending over a long term of years, and since uniform rules and descriptions are necessary before uniformity in ratings is possible, it marks an important step toward a uniform classification. Definite action in the direction of uniformity was taken about 10 years ago, when the carriers created their committee on uniform classification, to which was assigned the duty of working out a common set of rules and descriptions for the three general classifications. This committee made disappointingly slow progress, largely because of technical considerations and the disposition of the carriers in each territory to force their views and measures of expediency upon the carriers in the other territories. It was abolished shortly after the proposed consolidated classification was prepared.

The special committee which prepared the consolidated classification consisted of the chairman of the committee on uniform classification, the chairman of the Official and Western Classification committees, a member of the Southern Classification Committee, now its chairman, and our classification agent. In consolidating the classifications and unifying the rules and descriptions the members of the special committee are understood to have been guided largely by their own ideas. They were not of one mind in respect to some of the changes they have proposed in the rules and descriptions. Numerous concessions were made and some long standing and deep rooted controversies growing out of territorial or local traffic policies were cast aside. There are instances in which the existing rules as to a given situation and the descriptions, even of like articles, differ widely in the three classifications, and in respect of certain items some radical changes were necessary in order to accomplish the desired uniformity.

As stated, the consolidated classification also proposes many changes in ratings. The special committee was not directed, however, to change ratings where that was not necessarily or reasonably incident to changes in descriptions. The task assigned to the special committee was merely the completion of the work begun years ago by the committee on uniform classification, which committee had nothing whatever to do with ratings. The changes in ratings were proposed, not by the special committee as a body, but by the representatives of the respective territorial committees, individually and on their own initiative. The representative of each classification committee undertook a realignment of the ratings in his

own classification, in accordance with what he conceived to be proper principles and considerations. Our representative on the special committee had no voice in fixing any of the proposed ratings. There was no concerted effort to make the ratings uniform, but the desirability of uniformity seems to have been kept in mind, and as to a number of items where there were considerable differences in the existing ratings in the three classifications, changes were proposed which effected a greater degree of uniformity, particularly in the higher classes. Changes proposed for the purpose of attaining a greater degree of uniformity have more of an upward than a downward trend.

The table below, showing the nature and number of changes and new items proposed, was prepared by the special committee and submitted with its report to the director of traffic:

Nature of changes	Number of changes in the classifications			
	Official	Southern	Western	Total
Increase in ratings.....	890	2,574	393	3,857
Reduction in ratings.....	478	898	464	1,840
Carload ratings eliminated*	136	1	4	141
Increases in minimum weights.....	342	599	194	1,135
Reductions in minimum weights.....	229	73	61	363
Carload minimum weights to which rule 34 is added, subjecting them to the graduate scale.....	39	49	132	220
Additions or new items.....	1,144	1,665	425	3,234
Total.....	3,258	5,859	1,673	10,790

*The number of carload ratings established does not appear, but they are included in the reductions.

A Uniform Classification

We have stated that the consolidated classification marks an important step toward a uniform classification. Our hitherto most important case in which the matter of classification uniformity was considered was the *Western Classification Case*, 25 I. C. C., 442, decided December 9, 1912. In that proceeding the lines parties to the western classification sought to establish a large number of changes, including revised rules and descriptions which had been recommended by the committee on uniform classification. We there discussed classification matters rather fully and stated that in our opinion a uniform classification was practicable, but that there were great difficulties to be overcome, particularly in so far as uniform ratings are concerned. In the instant case several traffic organizations, one or two state commissions, and a number of the shippers who would be adversely affected by the changes proposed in the consolidated classification as a result of efforts toward uniformity went on record as being opposed to, or at least not advocating, a uniform classification, contending that there are such wide differences in conditions in the various parts of the country as to make a uniform classification impracticable and undesirable. We are now, as formerly, fully convinced that a uniform classification, with such exceptions or commodity rates as may be necessary in special cases, is practicable and desirable, and practical uniformity should not be unnecessarily delayed. Naturally there must be both increases and reductions, which may adversely or advantageously affect individual shippers and carriers, but a broad view of the situation justifies the statement that carriers and shippers alike will be amply repaid in the end by the benefits which will accrue from uniformity. The fact that a uniform classification would be of convenience is a consideration of relatively minor importance; we have advocated uniformity because it is an essential part of the general scheme which contemplates greater consistency in rate making and elimination of discriminations and inequalities.

Placing the ratings in juxtaposition in three parallel columns opposite the descriptions impresses us as never before with the great lack of consistency that exists among the three classification territories. Many of the inconsistencies are due to considerations of minor importance and could be removed

without changes in rate scales and, in our view, without serious effect upon any one, particularly in so far as less-than-carload ratings are concerned. In large part different ratings in the three territories are not due to actual or substantial differences in circumstances and conditions, but are the result of mere differences of opinion and the natural inclination of traffic officials to give expression to their respective theories of classification. For instance, on furniture in less than carloads, the chairman of the official committee, following a practice of long standing in his territory, proposes the same rating for the articles wrapped as for the articles boxed or crated. The chairmen of the southern and western committees in some instances do the same thing; in others they do not, but propose ratings one or two classes higher for articles wrapped than if boxed or crated. Moreover, the proposals of the three chairmen, even as to one and the same article of furniture, are in some cases directly opposed to each other.

General Observations

As we have pointed out, most of the increases proposed have no necessary connection with the work of consolidating the rules and descriptions. None of them, except such as were necessarily or reasonably incident thereto, were contemplated by us when we suggested a unification of the rules and descriptions, and, as we understand it, were not in the mind of the director of traffic when he appointed the special committee. When the case was assigned for hearing we did not realize that there was such a vast number of changes that had no necessary connection with the work required of the special committee.

The director general did not intend that the consolidated classification should be a revenue measure, and the chairmen of the classification committees disclaim any purpose on their part to make it such. While in fact it would yield the carriers some additional revenue, the record is convincing that, in the main, the proposed increases reflect conscientious efforts to bring about a proper relationship of ratings and to fairly distribute transportation expenses over the various articles of traffic.

A study of the changes in ratings proposed by the classification chairmen disclosed inconsistencies in each territory which apparently we could not endorse. We therefore made a comprehensive analysis of the existing and proposed ratings to ascertain whether or not we could properly recommend, with modifications, the somewhat general revision of ratings proposed, or an amplification of those proposals. We find that we can not properly recommend either for the reason that many and important changes as to which interested shippers have had no notice or opportunity to be heard would be included.

Our analysis of existing and proposed ratings was made with a view of also ascertaining what changes in existing ratings other than those proposed would, in the judgment of our classification and general traffic experts, formed without fully hearing shippers or carriers that would be affected thereby, be proper to propose in any general revision of ratings having for its principal purpose attainment of a higher degree of uniformity. The results of this analysis appear in Appendix No. 6, and constitute practically a uniform classification so far as the first four classes are concerned. The results of this laborious work are thus preserved. They will be available and valuable in the future as efforts in the direction of uniformity progress. They must be understood to be the tentative views of our expert assistants who heard the case and in no sense as findings or conclusive suggestions by us. However, the suggestions in this appendix, so far as they affect descriptions, packing specifications, and minimum and estimated weights are adopted as recommendations by us without prejudice.

We can not recommend the increased ratings as proposed,

nor can we recommend, with modifications, those proposed unaccompanied by many others that have not been proposed and as to which no opportunity for hearing affected parties has been afforded. We shall not recommend any changed ratings except as the establishment of new items may indirectly effect changes, and such changes as may be a necessary part of the establishment of uniform descriptions of articles, uniform minimum weights, or uniform packing requirements. Our recommendations as to such changes will not prejudice any complaint that may be filed as to individual changes that are believed by complainant to result in unreasonable rates or in undue prejudice.

Commissioner Woolley, dissenting in part, said:

At the close of the majority report, 54 I. C. C., 1, 72, I reserved the privilege of announcing separately my views on this subject. The course this proceeding has taken and the conclusions announced by the majority lead me to the conviction that our administrative functions have been pressed into the background by a seemingly nice, yet in my judgment a wholly unwarranted, judicial finding, which unhappily prevents expedient and effective progress toward a result urgently sought by the commission itself for more than a score of years.

The Congress was first apprised by the commission in 1897 of the desirability of a uniform classification, and 10 years later, 1907, was informed that the carriers then had taken definite steps to establish it. Also in this latter year the National Association of Railway Commissioners unanimously adopted a resolution requesting the Congress to "enact a law requiring the Interstate Commerce Commission at once to proceed to make a uniform classification * * *." Since then in nearly every annual report for the past 10 years the commission has informed the Congress of the progress—rather lack of progress I would say—made by the carriers toward the end sought. Apparently the theory was that the task should primarily be left to the carriers to work out, and that course was followed. After at least 10 years' endeavor real results were still in the promising stage, and it was not until the properties and operations of the carriers fell under federal control that the commission finally succeeded in having brought forward suggestions for greater uniformity in the concrete form of a consolidated classification. Judging from previous progress this was possible only because the railroads of the country were being operated as a unit under a single directing head.

The director general did not seek by independent action to give effect to the proposed classification; he did not assume the responsibility of filing the classification pursuant to the regulating statute, but simply sought our recommendations as he was authorized to do under section 8 of the federal control act, and we so reported the situation to the Congress. I mention these facts merely to emphasize the status in which the classification reached us and to make it plain that the recommendations sought could be given as a matter of course without adversely affecting the legal rights of shippers. Their day in court could not be taken from them in that way.

Presumably, in the light of the commission's inquiry as to the possibility for complete uniformity of "rules and description" by January 1, 1919, and the fact that the consolidated classification contemplated an even greater and more important degree of uniformity in the sense that it proposed greater uniformity in ratings and numerous other changes, the director general was disinclined to file it as a classification without first obtaining the recommendations of the commission. Be that as it may, the form of presentation left us free to bring into play our administrative functions unhampered by technical legal strictures. There was no issue presented for trial and no judicial finding to be reached under the act to regulate commerce, unless, technically, the commission itself raised such an issue by making respond-

ents the comparatively few short lines not under federal control, which are sustained largely by their share of trunk line rates governed by the three principal classifications now in force. As I view the situation, however, we were asked only for recommendations, and were free to give them, in an administrative sense, both as to the carriers under federal control and the remaining few that had been relinquished, without prejudicing the rights or interests of either shippers or carriers.

Based upon the same deep study followed by the experts on the several classification committees and the special committee created by the Railroad Administration, and after a wide field of inquiry and hearing, the combined judgment of our attorney-examiner and classification agent was not only to sustain in a large measure the suggested changes in ratings but to advocate the immediate adoption, as shown in Appendix No. 6 of the majority report, of almost complete uniformity with respect to the first four classes as well as the partial uniformity suggested in the remaining classes. With commendable prudence they worked over the mass of detail and out of it marshalled a real approach toward the result the commission has sought for more than a score of years. The parts of the work which proposed substantial uniformity in ratings, and likewise the parts of the work of the several committees which proposed desirable changes—I refer to the proposals and suggestions that reach beyond uniformity of "rules and description"—are passed to the director general by the commission, not with recommendations, but, as I read the majority report, with the suggestions that these parts be merely laid upon the shelf labeled "preserved for future reference." In course of a few years we may again hear of this work, but is it not likely then to be labeled "obsolete"?

There has thus been another move in what may be likened to a game of chess commenced in 1897; the director general passed to the commission the question of changed ratings and the commission passed it back. The reason assigned for declining to make recommendations in respect of ratings is "that many important changes as to which interested shippers have had no notice or opportunity to be heard would be included." To my mind this means about the same as sustaining a demurrer to a dilatory plea in an ordinary lawsuit, rather than the exercise of an administrative function. We have ample authority under section 15 of the act to prescribe reasonable classification ratings and rates, and in my judgment the commission will not accomplish the uniformity in classification which for years it has been seeking, and which it evidently believes would be reasonable, until we affirmatively exercise our administrative functions in that direction.

In the recommendations made I concur only because they are a step in the right direction; but I am unwilling to acquiesce in declining recommendations in respect to uniform ratings upon the ground that changes are suggested of which shippers have had no notice or have not been heard, when the rights of such shipper are amply protected by the statute.

In expressing this view I do not wish to convey the impression that I favor, either in the form of uniform classification ratings or otherwise, substantial increases in rates for revenue purposes. I am opposed to that course and have been since the beginning of this proceeding; moreover, the presentation of the proposed classification was accompanied by an express disavowal that it was intended as a revenue measure. The point I wish to emphasize is that recommendations looking toward uniform ratings and the prompt establishment of a uniform classification could have been made without, in a legal sense, approving or authorizing increased rates. If any unwarranted and unjustifiable rate increases resulted such shippers as found themselves adversely affected promptly could seek and secure relief under the provisions of the regulating statute.

General News Department

The Seaboard Air Line has decided to use oil fuel in the locomotives on its lines south of Hamlet, N. C., and has contracted for a supply of oil from Mexico.

The Mechanical Section of the American Railroad Association has given notice that the Rules of Interchange as revised in June, 1918, will be continued in effect until November 1, 1919.

The House of Representatives has passed a bill taking away from the President the power to change rates without the approval of the Interstate Commerce Commission. The House bill amends a bill already passed in the Senate and now goes to conference.

The Brotherhood of Railway and Steamship Clerks, Freight Handlers', Express and Station Employees has been ordered to take a strike vote to enforce demands made to the Railroad Administration by the Brotherhood on August 18, according to statement accredited to J. J. Forrester, president of the brotherhood.

W. Merrifield, lately sergeant in the British army, but now a fireman on the Algoma Central & Hudson Bay, was invited to board the royal train when the Prince of Wales passed over that line, and was invested by the prince with the Victoria Cross. Sergeant Merrifield won this decoration at Cambrai in October, 1918.

The Sandusky (Ohio) Chamber of Commerce has instituted a campaign for the early realization of the project to build a bridge across Sandusky Bay with available tracks for the Northwestern Ohio, thereby giving it an entrance to Sandusky. A general committee of bankers, manufacturers and merchants has been appointed to push the project to completion.

The city of Youngstown, Ohio, has applied for a writ of mandamus to force the Erie to proceed at once with grade separation work in that city. The application claims that the road has not proceeded with due diligence to acquire land needed for the elimination of a number of crossings and in the meantime property values have advanced, which will mean a loss to the city, as it is responsible for 35 per cent of the expenses.

Several hundred claims against the American Railway Express Company, for goods lost, were the subject of a conference of merchants in Philadelphia last week, the claims being for packages which were collected from shippers by a thief, disguised as a truck driver for the express company. Whether or not the claims have been presented to the company is not stated. The merchants are going to demand payment for their losses on the ground that the express company is responsible for failure to prevent the unauthorized use of its drivers' uniform.

"Fire-Prevention Day," October 9, is to be converted, this year, in Chicago, into a "fire and accident prevention day." The Chicago Association of Commerce has promulgated this title, and has urged all residents of the city to co-operate in the reduction of accidents and in the prevention of fires. October 9 is the anniversary of the Chicago fire, and public exercises are to be held. The circulars issued in this campaign refer repeatedly to the success of the Railroad Administration in conducting its "no-accident week" and similar campaigns.

Sir Alfred W. Smithers, chairman of the board of directors of the Grand Trunk Railway of Canada, has agreed to submit to arbitration the question of the terms on which the Grand Trunk System shall be transferred to the Dominion Government, the decision of the arbitration tribunal to be accepted as final by both sides. The Government has offered

the directors an annual rental of \$3,600,000, this amount being based on the average earnings of the last ten years. The directors asked \$5,800,000, basing their demand on the net receipts in 1913.

At the threshold of bankruptcy, is the present position of the railroads of America, according to Robert F. Maddox of Atlanta, Ga., president of the American Bankers' Association. The statement was made in the course of an address before the Illinois State Convention of the American Bankers' Association, held recently at La Salle, Ill. The cause, Mr. Maddox declared, was that the nation's roads never had been able to convince the federal rate making body of their financial need. His address also included a plea for a solution of the present railroad problem that would be free of all political consideration.

Six and a half miles is the latest airplane altitude record; made near New York on September 18, by Roland Rohlfs. The exact indicated height was 34,610 ft., and it is officially reported. This is 5,610 ft. higher than the highest peak of the Himalayas, the highest mountain in the world. At about 17,000 ft. the airplane became invisible from the earth and was out of sight for an hour. The aviator wore an oxygen mask, and began inhaling oxygen when he was at a height of 20,000 ft. For twenty minutes he was in a temperature of 43 degrees below zero. The management of the machine in the rarefied air above 31,000 ft., was very difficult. On the following day Rohlfs rose from the ground to a height of 2,000 ft. in ten minutes.

A train robbery on the Canadian National, near Harlaka, a short distance from Quebec, on the morning of September 18, is said to have netted the robbers \$100,000. The train was the Ocean Limited, eastbound. Five masked robbers appeared in the mail car, while the train was in motion, having smashed in the rear door of the car; and after intimidating the mail clerks, and taking the money, which was in coin, in bags, they jumped off the train while it was approaching the next station, St. Thomas; the robbery was not discovered, however, until the train had run about 25 miles farther, to Cap St. Ignace, where the conductor became suspicious at the silence in the mail car. He went in, and found the five clerks bound with ropes.

Dr. John D. Robertson, health commissioner of the City of Chicago and head of the Smoke Prevention Bureau, recently declared, in connection with a smoke prevention drive he is now conducting, that smoke from locomotives in the city of Chicago must be eliminated. Just how this can be accomplished Dr. Robertson is not quoted as saying. A recent newspaper statement quotes him as saying: "I don't care how the railroads end the smoke nuisance. They can use smokeless coal, change their boilers or do anything they desire, but the smoking engines must stop. No excuses will go." Railway executives, master mechanics, and locomotive firemen and engineers were called into conference in Dr. Robertson's office and plans were formulated for reducing the smoke nuisance insofar as the railroads entering Chicago are concerned.

The United Mine Workers of America, in convention at Cleveland, Ohio, in addition to advocating an alliance with the railroad brotherhoods, have further co-operated with the latter in opposition to the clauses in the Cummins bill, now pending in the Senate, prohibiting strikes in the railroad industry. In addition, they have formulated a demand for a 60 per cent increase in wages, a limit of six hours upon the lay's labor underground, a five-day week with time and a half for overtime and double time for work on Sundays and holidays. A joint wage scale conference is to be held with

the operators of the central competitive district at Buffalo, N. Y., at which a new agreement will be discussed. Should no agreement be reached at this conference in time to be ratified by the convention, which will be reconvened at Indianapolis for that purpose, a general strike of all bituminous coal miners in the United States will automatically ensue on November 1.

A shortage of labor, housing and storage facilities has led to a congestion of freight at the Detroit (Mich.) terminals and as a result an embargo on less than carload freight has been considered as a means of eliminating this congestion. The terminal warehouses are full of household goods, in addition to which there is a large accumulation at the present time in cars on the terminal tracks that is unable to reach the terminal warehouses. In addition many families arriving in Detroit with their household effects have been forced to re-ship them to their former homes because of the congestion. Efforts are being made to force consignees to remove their shipments at the end of the three-day storage period allowed them and it is hoped by this means to eliminate the congestion to a certain extent. It is believed by railroad operating officers at Detroit that if freight can be moved from the terminal warehouses within the three-day time limit, much of the present trouble will be eliminated and the railroads will be able to handle the situation without placing an embargo in effect.

Florida is the latest state to be advertised by the Railroad Administration. Its advantages as an agricultural state are presented in an illustrated booklet issued by the Division of Traffic, Agricultural Section. P. H. Rolfs, dean of the Florida Agricultural College, who extends a welcome to home-seekers, says that the opportunities offered by Florida are unsurpassed in any part of America; and America is the best of the world. "Florida is a land of undeveloped opportunity, as well as a land of almost unlimited agricultural possibility. It is a land in which agriculture is new, giving an opportunity for the largest range of imagination and constructive ability. . . . Nature has done almost everything to make this an ideal land for agricultural development. The cold is rarely severe, even in northern Florida, and the hottest summer days are comparatively mild, sunstroke being unknown. The educational advantages of the state are second to none. . . ." Ralph N. Greene, State Health Officer, writes about health conditions. Dependable information is given regarding the state's farm production, transportation facilities, markets, roads, schools, churches and living conditions.

Meeting of Western Chief Special Agents

Chief special agents and heads of special service departments of all roads in the Central Western Region attended a meeting at Chicago on September 12, called by Hale Holden, regional director of the Central Western Region, at the request of R. S. Mitchell, chief of the Secret Service and Police Section of the United States Railroad Administration, to form a permanent regional organization of chief special agents and heads of special service departments for co-operative work of material benefit for the protection of property. Emmett Gregg, chief special agent of the Atchison, Topeka, & Santa Fe, with office at Topeka, Kans., was elected president of the new organization; H. A. Koach, inspector in the Secret Service and Police Section of the Railroad Administration, was appointed inspector at Chicago, and James Dahlman, also an inspector in the Secret Service and Police Section, was appointed inspector at Omaha, Nebr. The new association will appoint a committee having among its members representatives from railroad centers throughout the region. It will be the duty of this committee to appoint other committees at the smaller terminals or junction points. The chief special agent of the line having the most business at these points will designate his special agent as chairman of these subcommittees. Mr. Mitchell has also appointed an advisory committee of chief special agents, one from each region in the United States, who will meet with him to further direct the work. T. E. Pratt, chief special agent of the Chicago, Burlington & Quincy, with office at Chicago, will represent the Central Western Region on this committee.

Pullman Conductor's Pay Further Increased

A readjustment of the wages of sleeping and parlor car conductors has been made by the Railroad Administration which gives these men, numbering about 24,000, a further increase of from \$10 to \$15 a month, retroactive to May 1, 1919. This increase is in addition to the general raise of \$25 which was granted under general order No. 27 (April 14, 1919). That increase was based on incorrect data concerning working conditions, and the Pullman conductors did not receive an increase on a par with other railroad employees. The Railroad Administration calls attention to the fact that the present is not a further increase resulting from the demands of employees, but merely a readjustment to correct an error.

Safety on the Southern Pacific

In announcing the National Railroad Accident Prevention Drive, R. J. Clancy, in charge of this work for the Southern Pacific, Lines South of Ashland, calls attention to the fact that during the last 12 years the Southern Pacific has transported approximately half a billion revenue passengers (19,000,000,000 revenue passenger miles) with such a high degree of safety that, relatively, a passenger may travel on the Southern Pacific the equivalent of seven hundred and sixty thousand times around the world without danger of loss of life in a train accident. One of the safest places in the world is on a Southern Pacific train. "We have demonstrated ability to safeguard the traveling public, but what about safeguarding each other? Are we manifesting the same degree of interest and care in safeguarding ourselves? Our record in this respect is good, but we can make it better."

American Legion on the Pennsylvania

Employees of the Pennsylvania Railroad, at the general office in Philadelphia, who have been in the military or naval service, number over 1,400, and "Pennsylvania Railroad Post, No. 204," of the American Legion has just been formed. Over 500 men attended the first meeting, and were enrolled as charter members. Twelve such posts have been started on the lines of the Pennsylvania, east of Pittsburgh; and it is expected that the national body will approve of the wish of the employees to call these, permanently, Pennsylvania Railroad Posts. Altogether, on the eastern lines of the Pennsylvania, over 18,000 employees entered the military or naval service in the World War. Among those who have joined Post No. 204, are Brigadier General W. W. Atterbury, Colonel H. C. Booz, Colonel C. M. Bunting, Lieutenant-Colonel J. W. Study and Lieutenant-Colonel I. A. Miller. The president of Post No. 204 is Claude Liddy and the Secretary, J. M. O'Brien.

The President's Labor Conference

President Wilson has announced a list of 22 men whom he has invited to represent the general public at the conference to be held at Washington, October 6, to discuss relations between capital and labor. Twenty-two representatives of labor and an equal number of employers are also to be selected. The President's list is as follows:

Bernard M. Baruch of New York, former chairman of the War Industry Board; Robert S. Brookings of St. Louis, former chairman of the Price Fixing Committee of the War Industries Board; John D. Rockefeller, Jr.; Elbert H. Gary, chairman, United States Steel Corporation; Dr. Charles W. Eliot, president Emeritus of Harvard; Charles Edward Russell, of New York; John Spargo, of Vermont; O. E. Bradfute, Xenia, Ohio, president Ohio Farm Bureau Federation; Ward Burgess, Nebraska; Fuller R. Callaway, La Grange, Ga., cotton manufacturer; Thomas L. Chadbourne, New York; Charles G. Dawes, president Central Trust Company, Chicago; H. B. Endicott, Milton, Mass.; Edwin F. Gay, dean graduate School of Business Administration, Harvard University; George R. James, Memphis, Tenn.; Thomas D. Jones, Chicago; A. A. Landon, Buffalo; E. T. Meredith, Des Moines, Iowa, editor Successful Farming; Gavin McNab, San Francisco; L. D. Sweet, Carbondale, Col.; Louis Titus, San Francisco.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY, 1919

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total.	Way and structures.	Maintenance of equipment.	Traffic.	Portation.			
Penn. & P. Union.....	19	\$211,066	\$27,206	\$238,272	\$122,393	\$264,442	\$6,005	\$3,400,020	\$288,601	\$66,500	—\$225,967
Penn. & P. Union.....	19	\$211,066	\$27,206	\$238,272	\$122,393	\$264,442	\$6,005	\$3,400,020	\$288,601	\$66,500	—\$225,967
Philadelphia & Reading.....	2,232	14,107,838	3,181,708	17,289,546	2,276,316	3,672,601	195,722	7,930,819	14,645,491	360,628	1,636,032
Pittsburgh & Lake Erie.....	1,127	31,816,985	6,122,298	37,939,283	4,489,301	10,621,789	257,369	20,251,329	36,581,467	1,002,597	4,531,256
Pittsburgh & West Virginia.....	224	13,260,132	1,446,346	14,706,478	3,077,482	4,686,007	103,065	5,707,283	1,388,714	2,140,654	2,955,408
Pittsburgh & West Virginia.....	224	13,260,132	1,446,346	14,706,478	3,077,482	4,686,007	103,065	5,707,283	1,388,714	2,140,654	2,955,408
Philadelphia, Bethlehem & N. E.....	71	590,485	29,845	620,330	56,541	88,515	2,207	291,061	446,128	9,483	—107,415
Pittsburgh & Shawmut.....	103	590,485	29,845	620,330	56,541	88,515	2,207	291,061	446,128	9,483	—107,415
Pittsburgh, Cincinnati, Chic. & St. Louis.....	2,383	34,416,976	12,412,161	46,829,137	6,499,984	15,719,963	588,753	23,779,950	48,278,409	1,669,189	202,084
Pittsburgh, Shawmut & Northern.....	204	538,695	40,748	579,443	162,478	329,853	6,869	254,043	800,592	12,854	—57,677
Port Reading.....	21	890,313	1,457,128	2,347,441	118,366	88,439	110	713,420	927,898	63,000	96,378
Richmond, Fredericksburg & Potomac.....	81	2,280,818	2,057,022	4,337,840	390,400	602,553	30,769	1,524,897	2,708,645	87,958	641,681
Quincy, Omaha & Kansas City.....	255	380,323	173,775	554,098	240,498	104,322	1,685	307,201	839,661	111,68	—804
Rutland.....	415	1,435,543	73,025	1,508,568	443,829	658,604	50,093	1,274,713	79,012	2,510,523	8,669
St. Joseph & Grand Island.....	258	1,256,749	300,300	1,557,049	535,174	237,532	12,734	906,554	80,355	131,146	—73,765
St. Louis, Brownsville & Mexico.....	548	1,948,497	873,929	2,822,426	498,617	504,568	38,558	892,549	110,985	70,000	438,894
St. Louis Merchants Bridge Terminal.....	9	4,302	1,557,089	1,561,391	393,825	297,057	5,231	1,231,870	41,990	1,992,649	641,681
St. Louis-San Francisco.....	4,761	28,023,850	12,058,094	40,081,944	6,847,215	8,655,999	364,551	16,582,595	1,247,816	1,969,972	463,424
St. Louis, San Francisco & Texas.....	134	670,601	99,112	769,713	146,969	138,825	11,455	42,014	3,577,791	6,988,173	1,633,897
St. Louis Southwestern.....	939	5,687,587	1,175,068	6,862,655	1,244,987	1,666,934	118,039	2,310,142	268,513	10,641	—152,008
St. Louis Southwestern of Texas.....	814	2,484,030	810,693	3,294,723	945,416	1,257,543	55,556	1,872,588	163,966	305,029	1,198,912
San Antonio & Aransas Pass Ry.....	732	1,569,878	620,358	2,190,236	666,602	726,415	42,129	1,308,284	118,870	147,000	—826,059
Seaboard Air Line.....	3,563	14,367,233	7,630,072	21,997,305	3,457,346	5,050,592	422,722	11,516,884	744,778	105,000	—392,104
St. Louis Transfer.....	6	250,408	250,408	80,703	83,854	1,371	285,585	1,748	945,000	1,722,027
South Buffalo.....	11	636,667	32,112	668,779	32,112	112,340	2,065	361,623	15,448	700	104,946
Southern.....	6,982	43,513,366	21,473,463	64,986,829	12,750,633	15,744,683	851,859	31,385,108	1,844,118	2,270,647	89,905
Southern Ry. in Mississippi.....	278	572,957	313,559	886,516	253,621	138,219	15,995	546,875	28,779	983,519	—54,444
Southern Pacific.....	7,049	23,586,694	90,736,644	114,323,338	15,831,922	18,544,644	777,636	35,253,200	1,610,591	63,000	—95,444
Spokane International.....	156	5,151,337	109,577	5,260,914	578,013	53,224	11,563	701,221	73,676,718	12,673,700	—1,384,374
Southern Pacific Steamship Lines.....	554	2,775,900	991,220	3,767,120	636,667	32,112	2,065	361,623	15,448	700	104,946
Spokane, Portland & Seattle.....	554	2,775,900	991,220	3,767,120	636,667	32,112	2,065	361,623	15,448	700	104,946
Staten Island Rapid Transit.....	23	580,223	542,587	1,122,810	178,831	180,304	6,860	691,605	63,307	1,200,907	—32,293
Tennessee Central.....	293	1,027,801	326,477	1,354,278	158,319	138,219	15,995	546,875	28,779	983,519	—54,444
Terminal R. R. Assn. of St. Louis.....	36	23,505	2,101,324	2,124,829	508,095	398,446	5,457	773,897	46,458	1,655,146	83,464
Texas & New Orleans.....	87	599,928	116,340	716,268	142,238	141,506	7,560	273,481	46,458	1,655,146	83,464
Texas & Pacific.....	469	2,950,080	1,157,246	4,107,326	837,032	1,238,647	33,414	1,646,112	100,606	4,028,786	—137,919
Toledo & Ohio Central.....	1,946	13,150,078	5,232,816	18,382,894	2,788,012	4,059,745	173,688	9,076,886	502,435	16,748,049	—281,429
Toledo, Peoria & Western.....	435	4,189,885	441,340	4,631,225	867,973	1,576,275	44,979	2,123,095	116,202	4,745,716	—264,041
Toledo, St. Louis & Western.....	247	526,670	337,075	863,745	196,071	262,637	15,157	484,256	39,052	994,733	—48,008
Trinity & Brazos Valley.....	354	3,646,328	270,382	3,916,710	60,214	901,174	38,937	1,798,409	81,599	3,578,742	—374,313
Trinity & Brazos Valley.....	354	3,646,328	270,382	3,916,710	60,214	901,174	38,937	1,798,409	81,599	3,578,742	—374,313
Ulster & Delaware.....	128	354,442	100,829	455,271	99,147	131,274	9,849	445,307	32,031	721,104	—12,194
Union R. R. of Pennsylvania.....	40	3,344,442	1,000,829	4,345,271	536,192	1,24,937	1,845	2,397,232	52,751	4,211,902	—125,940
Union Pacific.....	3,614	41,330,082	12,338,183	53,668,265	8,793,537	10,866,626	319,140	17,117,144	1,638,745	40,114,613	267,192
Utah.....	98	603,493	3,786	607,279	80,713	185,255	1,106	128,246	14,095	369,803	1,200,298
Vicksburg, Shreveport & Pacific.....	171	1,165,696	527,239	1,692,935	318,368	405,439	19,506	692,371	57,715	1,509,264	—145,686
Virginian Ry.....	522	5,153,987	387,844	5,541,831	1,046,958	1,486,603	33,421	2,369,391	114,948	5,044,393	—438,635
Wabash.....	2,504	19,564,833	5,643,983	25,208,816	4,074,704	5,035,307	375,276	13,987,277	794,829	24,408,333	—952,090
Washington Southern.....	35	939,441	1,407,121	2,346,562	243,506	279,181	17,704	835,286	44,257	1,450,123	—529,596
West Jersey & Seashore.....	361	1,948,700	3,941,339	5,890,039	1,443,446	1,260,390	56,612	3,265,098	148,936	6,210,275	—174,543
Wichita Falls & N. W.....	328	814,032	260,525	1,074,557	321,765	178,411	8,498	624,314	48,987	1,181,976	—128,507
Western Maryland.....	704	6,720,530	588,652	7,309,182	1,528,965	2,640,124	123,201	3,297,081	299,895	7,969,019	—147,051
Western Pacific.....	1,011	5,233,280	967,343	6,200,623	1,693,314	1,272,934	84,374	2,176,956	155,904	5,509,008	—907,502
Western Ry. of Alabama.....	133	818,476	574,563	1,393,039	185,934	304,322	20,414	570,826	44,568	1,150,081	—4,216
Wheeling & Lake Erie.....	511	6,050,101	362,360	6,412,461	1,361,465	1,618,165	42,457	2,863,796	18,016	6,081,752	—238,657
Yazoo & Mississippi.....	1,382	9,534,523	2,900,567	12,435,090	2,859,663	3,900,701	106,997	5,090,701	338,466	10,416,783	60,383
Northern Alabama.....	112	521,253	90,020	611,273	152,385	38,963	9,051	424,359	13,147	637,760	—188,058

The Condition of the Cotton Belt

The tracks of the St. Louis Southwestern, in Texas, are unsafe for normal operation, according to a telegram given out at Austin by the chairman of Texas Railroad Commission, the telegram being signed by J. M. Herbert, president of the railway company. The telegram, as printed in Texas papers, reads:

"Undoubtedly portions of the St. Louis Southwestern tracks in Texas have reached a point through failure and neglect of maintenance by Railroad Administration of unsafe condition for normal operation, as evidenced by accidents killing and injuring employees and others, traceable directly to inadequate inspection and maintenance. In my opinion it is the duty of your commission to make an immediate inspection with view of having conditions improved. If you desire any assistance or further information from me shall be glad to respond."

The commission replied to Mr. Herbert with a request for detailed information, promising to make inspections where necessary.

The St. Louis Southwestern is in the Southwestern Region, B. F. Bush, regional director, and the federal manager is William N. Neff.

Public Ownership Conference

With the railroad question and the Plumb Plan solution of the railroad problem "the first and most important subject on the program," a public ownership conference will be held under the auspices of the Public Ownership League of America in Chicago on November 15, 16 and 17. The general purpose of the conference, as stated in the announcement "is to study the problems of public ownership, to get the ideas of the most careful and competent utility experts in America, to hear the methods and plans of those who have made a success of public ownership in this and other countries and to devise ways and means for the advancement of the public ownership, efficient operation and democratic control of public utilities." Glenn E. Plumb, author of the Plumb Plan for government ownership of the railways and their operation by the railway employees, will speak, and may, according to the announcement, enter into a debate on the subject, the negative side of which will be taken by a representative selected by the United States Chamber of Commerce, provided, of course, this organization accepts the invitation which has been extended to it. Lawrence B. Finn, chairman of the Kentucky State Railroad Commission, W. L. McKenzie King, leader of the Liberal Party in Canada and Frank P. Walsh, formerly of the War Labor Board will also speak on the railway problem.

National Agreement with Shop Unions

Heretofore the shopmen have had local agreements with the railroads being operated under the United States Railroad Administration. For some time the representatives of the shopmen and of the Railroad Administration at Washington have been working on a national agreement which should supersede the local agreements. Such an agreement has now been worked out and, in general, agreed on between the representatives of the Administration and the shopmen. It is expected that this agreement will be signed in the near future. In general, it does not change existing agreements materially, but simply incorporates the provisions of these agreements into a comprehensive national agreement. The scale of wages is not raised, it is understood, but the shopmen are left free to apply for higher wages on account of the increased cost of living and, in general, the form of agreement is like that entered into between the four brotherhoods and the Railroad Administration.

Pennsylvania's Relief to Soldiers; \$257,454

E. B. Hunt, superintendent of the Pennsylvania Railroad Voluntary Relief Department reports that from the time of the outbreak of the trouble on the Mexican border in 1916, to August 1 of this year, he has paid to the beneficiaries of those employees who were members of the Relief Fund and who were killed or died from other causes, while in military or naval service, \$182,000; to members incapacitated on account of sickness or accident while in military or naval service, \$44,130, and to dependent members of the families of these men \$31,324.

At the outbreak on the Mexican border the directors of the railroad company, granted furloughs to employees who

entered military or naval service and a special fund was created to provide financial assistance for these employees, as well as their families, in case of necessity. In April of the following year when the United States declared war on Germany, it was decided to continue the same arrangement during the world war, and employees who were members of the Relief Fund and who were disabled while in military or naval service, have regularly received the benefits provided by the rules. A special bureau was established in Philadelphia, which kept in touch with the military authorities; and the Voluntary Relief Department made prompt payment of benefits accruing to employees in the same manner as though they had been in the service of the railroad at the time.

Steel Strike Situation

The strike in the steel mills in the Chicago district, after continuing for almost two days without serious clashes between police, mill guards and strikers, resulted, on September 24, in fighting between strikers and workers leaving the plants. At the Indiana Harbor, Indiana plant of the Mark Manufacturing Company eight or ten men were badly beaten and others slightly injured in clashes between the loyal workers and members of the unions which are on strike. Very little change is recorded in the strike situation in the Chicago district. Union officers and company officers have issued statements concerning the situation which do not agree. The Elgin, Joliet & Eastern Railway, which is owned by the Steel Corporation and handles much of tonnage to the steel producing districts near Chicago, has not experienced any serious trouble so far and is handling regular tonnage already fabricated. However, the traffic from the cement plant to the steel mills has been practically eliminated because of the closing down of many of the furnaces. No action has been taken in the Chicago district by members of the railroad brotherhoods in regard to the strike.

Senator Hoke Smith Denounces Plumb Plan

Senator Hoke Smith of Georgia recently stated his position in regard to the Sims bill, in which is embodied the Plumb plan for government ownership of the railways and their operation by the employees, in a letter to Atlantic Coast Line Shop Federation officers in reply to a letter requesting him to aid in the passage of this bill. Senator Smith's letter in part is as follows:

"I desire to answer you with entire frankness. I am opposed to the 'Plumb Bill,' and do not believe it will receive considerable support in Congress. I feel sure it should not receive such support. I have had a number of letters from my constituents with reference to it, and all, except railroad men directly interested in the bill, have protested against its passage. I do not believe the railroad men will urge it when they fully understand it.

"As you perhaps know, for many years I have earnestly sought to help the men employed in the railroad service to better their conditions. I have insisted that the owners of the roads should not be permitted arbitrarily to fix the pay of the men, or to fix the conditions under which they were to work, and that the men were entitled to a hearing, and that finally, if the men and the owners could not agree, impartial arbitration should settle their disputes. This was the position of the brotherhoods for many years, and the right of arbitration was contested by owners of the properties.

"It is proposed in the 'Plumb Bill' that these properties bought by the Government shall be operated by the National Railway Operating Corporation, which is to be a corporation without capital stock; the Board of Directors, Official Employees and Classified Employees to constitute the corporation. The bill provides that the corporation is to be operated by fifteen directors, five named by the President and confirmed by the Senate, and five by the Classified Employees and five by the employees other than classified. But the employees, without putting up a dollar, are to have ten of the directors and control the corporation.

"The 'Plumb Bill' therefore proposes that one hundred and ten millions of people buy eighteen billions of dollars worth of property and turn it over to be controlled by a Board of Directors, two-thirds of whom are selected by the employees of the railroads.

"The proposition is so unreasonable it scarcely deserves serious discussion.

"Again, how could you obtain the railroads by issuing the

bonds? The owners would not be compelled to sell except for money. It would probably be necessary to go into the markets and sell the bonds. We know the difficulty with which we sold Liberty and Victory bonds. It required the patriotic enthusiasm of the entire people to absorb them. It created a vast quantity of credit, and to a substantial extent, disorganized the business of the country. To put eighteen billions more of bonds upon the market would be most unwise.

"Furthermore, if such a course was justified as to railroads it would be justified as to all other industries. It would be justified as to farms. The amount of the bond issue would reach a fabulous sum. It would be to substitute Russian conditions for our own.

"Now, let me say to you a word which comes from my sincere regard for you, and my earnest desire for your welfare.

"Last year the payroll of the employees of the railroads was increased approximately one billion dollars. It may be that this amount was not equally distributed among the employees. If so, adjustments should be made. But this one billion dollars increased the cost of living of all the people. It went to increase freight rates and increased passenger rates. The necessities of life became more expensive as a result of this increased compensation to the railroad employees. This one billion dollars is carried by the farmer, by the man in town, and by the man in the city. Not only did the railroad employees receive their increase in pay, but they received approximately five hundred millions of dollars in back pay.

"Be wise and be reasonable. Do not allow yourselves to be persuaded to adopt extreme measures. You have won the confidence of your fellow citizens. In years past you have enjoyed their intense sympathy. You cannot afford to lose it. You cannot afford to put yourself in the position of seeking to force discriminatory advantages.

"When you were opposed I fought for you, and now I beg of you not to take action which will place you in the position of seeking to do injustice to others."

Shortage of Automobile Cars

On account of the acute shortage of automobile box cars in the Michigan-Ohio territory, R. H. Aishton, regional director of the Northwestern Region has issued instructions to suspend the loading of automobile cars at all points within 500 miles of Chicago and expedite these empty cars east through Chicago. The only exception to this order is actual automobile loading within the restricted territory.

Master Car and Locomotive Painters' Convention

The Master Car and Locomotive Painters' Association met at the Hotel LaSalle, Chicago, on September 9, for its forty-eighth convention, with J. F. Gearhart, foreman painter, of the Pennsylvania Railroad at Altoona, Pa., presiding. The association was welcomed by a representative of the Chicago Association of Commerce, following which the president addressed the convention and the secretary-treasurer presented his report. The association then proceeded to the consideration of technical papers.

At the Wednesday morning session the question of amalgamation with the American Railroad Association was considered and it was voted unanimously to join as a division of the Mechanical Section.

Roadmasters' Association Elects Officers

At the closing session of the thirty-seventh annual convention of the Roadmasters' and Maintenance of Way Association in Chicago on Thursday of last week the following officers were elected for the ensuing year: President, J. W. Powers, supervisor, N. Y. C., Rochester, N. Y.; first vice-president, W. P. Wiltsee, principal assistant engineer, N. & W., Roanoke, Va.; second vice-president, L. M. Denny, supervisor, C. C. & St. L., Indianapolis, Ind.; secretary, P. J. McAndrews, roadmaster, C. & N. W., Sterling, Ill., (re-elected); treasurer, Coleman King, supervisor, L. I., Jamaica, N. Y. (re-elected). Directors: J. B. Baker, supervisor, general manager's staff, Penn. R. R., Philadelphia, Pa.; R. J. Vaughan, general roadmaster, U. P., Green River, Wyo.; T. E. White, roadmaster, A. C. L., Sumter, S. C.

Traffic News

All previous records for the handling of livestock cars were shattered at the South Omaha, Nebr., yards on Monday, September 15, when the receipts of stock cars totaled 1,337 cars. Again on Friday night, September 19, a record for the month of September was established for the loading of live stock cars at the same yards, a total of 475 cars being loaded and moved.

Thomas J. Lipton, Inc., London, Eng., has established a traffic department in Chicago with A. C. Hedlund as western traffic manager. Mr. Hedlund was formerly connected with the Chicago office of the Southern Pacific for fifteen years, holding various positions. He was foreign trade agent of the Southern Pacific at Chicago previous to the closing of that office by the Railroad Administration. Since that time he has been connected with the Trans-Oceanic Company, with office in Chicago.

The United States Grain Corporation recently announced that it is paying country grain dealers thousands of dollars each week under the terms of an agreement that any dealer unable to ship at least 20 per cent of his holdings within a given week is entitled to 3½ mills a bushel a week from the corporation to cover interest and insurance charges. The shortage of cars for shipment of grain has resulted in many claims being made for such allowances and these are being paid by the Grain Corporation.

Dracos A. Dimitry, traffic manager of the New Orleans & South America Steamship Company, New Orleans, La., has been placed in temporary charge of that concern's new office in Chicago. Mr. Dimitry was for a number of years connected with the traffic departments of the Southern Pacific and the New Orleans & North Eastern, with office at New Orleans, La., and before serving in the war as an army aviator he was traffic manager of the Great Southern Lumber Company at Bogalusa, La.

The Traffic and Transportation Bureau of the Tacoma (Wash.) Commercial Club and Chamber of Commerce, believing that shippers should express their views on the question of proposed railroad legislation, has adopted a plan for the solution of the railroad problem. This plan is based largely upon the plan adopted by the Chamber of Commerce of the United States, but with a number of changes. Copies of the plan have been forwarded to members of the Senate and House committees on interstate commerce for their consideration.

The Railroad Administration's report on export traffic for the week ending September 17 shows 6,899 cars of commercial export freight received at North Atlantic ports, as compared with 941 cars for the same week of 1918, an increase of 5,958 cars or 621 per cent. At South Atlantic and Gulf ports there were 8,925 cars of export freight on hand on September 16, as against 8,621 cars one week previous, an increase of 304 cars. For the week ended September 17 there were 14,885,043 bushels of grain in elevators at North Atlantic ports and at South Atlantic and Gulf ports 9,211,442 bushels. The elevators at Port Arthur were empty.

Macon (Georgia) Prepares for Railway Strike

The Macon (Ga.) Chamber of Commerce, fearing the possibility of a general railroad strike, has organized a fleet of 500 motor trucks to haul freight to and from Macon in event threats of the leaders of the railroad unions to call a nationwide strike of employees should materialize. Furthermore, the motor truck division of the transportation department of the Chamber has organized a force of drivers and adopted plans for conserving supplies of gasoline and lubricating oil. This motor transportation plant was formed primarily to insure an adequate food supply coming from the rural

districts around Macon, but it could also carry merchandise to farms and country towns.

Also, the Chamber of Commerce has adopted resolutions advocating amicable settlement of the differences between the railroads and their employees, opposing any steps that may constitute a surrender of the carriers to bolshevistic tendencies.

Civic and commercial organizations of Georgia have been informed of the action taken and their cooperation requested. It is proposed to establish motor express lines, paralleling the railroads and connecting with each other.

Refrigerator Car Shortage

Some interesting facts on the production and movement of perishables have been compiled by William Sproule, district director of the United States Railroad Administration at San Francisco, Cal. His view of the car shortage situation, insofar as California perishables are concerned, is as follows:

"The fruit and vegetable crops throughout the United States have been very large and shipments heavy. Every car that could be had anywhere has been pressed into this national service. The fruit is carried in special trains and returning refrigerator cars have preference over every kind of freight except livestock. The production of fruit was greatly stimulated during the war, but no refrigerator cars could be built. This stimulation is still felt and it naturally creates an acute demand for each refrigerator car in this year when the crops requiring such cars are heavy everywhere from California to Georgia, and from Florida to the Pacific Northwest. It is a crop surplus rather than a car shortage. For the past three months shipments from California were about 50 per cent above the same period last year. During the first twelve days of the current month, the Pacific Fruit Express alone furnished 71 per cent more cars for fruits and vegetables in California than during the same days in 1917, and 66 per cent more than during the same days in 1916. For the five months, June to October, inclusive, the increase in shipments of fruits and vegetables this year will probably be about 45 per cent and possibly 50 per cent above last year."

Terminal Committees to Expedite Car Movement

The traffic managers at Kansas City, Mo.; Omaha, Nebr.; Peoria, Ill.; Des Moines, Iowa; Davenport, Iowa, and Alton, Ill., and the chairmen of the local operating committees at Denver, Colo., and St. Joseph, Mo., have been instructed by Hale Holden, regional director of the Central Western Region, to create a special committee at once to specialize in the handling of all equipment matters at terminals under the jurisdiction and supervision of the terminal managers and chairmen of the local operating committees. The purpose of these committees will be, in general, to expedite the handling of equipment at terminals in order to relieve, as far as possible, the present acute car shortage. A study of methods of speeding up road and yard movement, securing heavier loading equipment, establishing and maintaining complete and accurate yard checks, reducing the number of bad order cars, making prompt delivery to connections, effecting earlier deliveries at freight houses and team tracks, preventing delays and abuse of equipment loaded with company material and expediting movement of grain cars in terminals will be made. In addition the committees will give particular attention to the service to and from industries and to interchange between lines. It is believed by means of this study and work that much lost motion in the delivery of cars to industries, either loaded for unloading or empty for loading, and in taking away such cars promptly when they are ready to move, either as loads or empty, will be taken up. The men selected by the terminal managers and the chairmen of the local operating committees to serve on the special committees are to belong to the terminal organizations and be carried on the payrolls of the present employing road. In addition, as many outside inspectors as are necessary to make the committee's work effective are to be employed and the committee will function as a separate department of the terminal organization.

Commission and Court News

State Commissions

The Railroad Commission of California has received from Tehama County an appeal that the Commission compel the Southern Pacific to proceed with the construction of a subway under its tracks near Red Bluff. The county officers declare that the plans for the subway have been approved by the county, the highway commission and the railroad and that the county is ready to proceed with its share of the work. It is asserted in the application that eight months ago the railroad sought delay due to the fact that labor and material were increasing in cost, that furthermore this condition is likely to continue and that therefore no further delay should be tolerated.

Nebraska is again suffering from the seasonal shortage of grain cars, according to a bulletin issued by the Nebraska Railway Commission. This shortage bids fair to be as severe as that of 1916 with a difference that at the present time the price of grain is fixed, whereas in 1916 the price was steadily rising. After considering the matter carefully, the commission decided that it would make no efforts this fall to see that cars were equitably distributed between railroad stations and between shippers at stations. This position was taken because, under the decisions of the Supreme Court, the federal government has supreme power in handling the railroads during the period of government control and state commissions cannot attack its jurisdiction.

Personnel of Commissions

Simon J. McLean, whose appointment as assistant chief railway commissioner of the Board of Railway Commissioners of Canada was announced in the *Railway Age* of September 12, was born on June 14, 1871 in Quebec, Que., and was educated at private and public schools in that city. He was graduated from the University of Toronto in 1894 and from 1894 to 1897 he was a graduate student in economics at the Universities of Toronto, Columbia and Chicago. From 1897 to 1902 he was professor of economics and sociology at the University of Arkansas, in addition to which he served as an expert on railway commission legislation and as a special commissioner on railway rate investigations for the Department of Railways and Canals of Canada. From 1902 to 1905 he was associate professor of economics and social science at the Leland Stanford Jr. University, California. In 1903 and 1904 he served as expert in charge of railway valuation in the Rocky Mountain states for the Bureau of the Census and the Interstate Commerce Commission. From 1906 to 1908 he was associate professor of political economy at the University of Toronto and in 1908 was appointed a member of the Board of Railway Commissioners of Canada. He was re-appointed for a second term in 1918, in which capacity he served until his recent promotion.

Court News

"Stop, Look, Listen"

The Pennsylvania rule as to the traveler's duty to stop, look and listen before attempting to cross a railroad is somewhat more stringent than in the majority of the states. It is an absolute and unbending rule that a traveler must stop, look and listen before he crosses any tracks. If he has done this and then proceeds, the question whether or not he has thereafter exercised proper care and whether it is necessary for him to stop again, is held a question for the jury. The fact that the first track was a siding on which cars impeded the traveler's view did not, the Pennsylvania Supreme Court holds, relieve him from the obligation of the rule. It has also been held that when a driver stops at a point where an

obstruction prevents a proper view of the railroad, he must descend from his vehicle, and, if necessary, walk to a point where the prospect is clear.—*Benner v. Philadelphia & Reading (Pa.)*, 105 Atl. 283.

The Alabama Supreme Court holds that a person attempting to cross a railroad track on which cars and locomotives are liable to be passing cannot recover for simple negligence of the railroad unless he stops and looks in both directions and listens; and this duty is absolute at any railroad crossing, whether in a city or the country, or whether the track crossed be the main line or a side track, and regardless of the frequency of passing trains.—*A. C. L. v. Jones (Ala.)*, 80 So. 44.

Employers' Liability Act

An employee was injured while riding to work on an engine provided by his employer. His regular work consisted in cleaning fires and coaling locomotives, part of which were engaged in interstate commerce. The New York Appellate Division holds that he was at the time of injury engaged in interstate commerce within the act.—*Lindstrom v. New York Central*, 174 N. Y. Supp. 224.

Fires from Sparks

In an action for damages from fire from a locomotive, the Connecticut Supreme Court of Errors holds, *Gra. Rock Spring Co., v. Central New England Ry. Co.*, 105 Atl. 350, that evidence of other fires, and of the emission of sparks, and of the finding of cinders, should be limited in point of time and place to facts having some probative value in establishing the probable cause of the particular fire in question. The admissibility of such evidence is a matter of judicial discretion.

Intrastate Shipments—Limitation of Liability

Where rates for intrastate shipments are based on the value of the property as set out in the contract, the Kansas Supreme Court holds that a provision thereof limiting the carrier's liability to that amount is valid, even with respect to loss occasioned by its negligence. In the absence of evidence to the contrary, it will be presumed that the tariffs in use by a carrier have been properly filed with the utilities commission.—*Kennedy v. Atchison, T. & S. F. (Kan.)*, 179 Pac. 314.

Burden of Proof of Non-Delivery

The burden rests upon the shipper, in an action against a railroad, to establish the fact of nondelivery of freight. The New York Appellate Division holds that the mere fact that the goods were receipted for at destination by a third party was no evidence of nondelivery to the consignee, in the absence of proof that such party was not authorized to accept the goods on his behalf; nor was hearsay evidence of an assertion by the consignee that he had not received the goods.—*Hirsch v. L. V.*, 174 N. Y. Supp. 68.

Refusal of Train Men to Extinguish Timber Fire

The Pennsylvania Supreme Court has repeatedly held that where a railroad company takes the necessary precautions and employs a proper mechanism to prevent the escape of sparks from its engines, there can be no recovery of damages for any injury which results simply from the throwing of sparks, provided the mechanism is in proper condition. A somewhat different question arose in a recent case. A fire started on land contiguous to a railroad's coal branch, but not on its right of way, and not from any negligent operation of its trains. The fire extended to land beyond and set fire to timber thereon. In an action for the destruction of the timber the negligence alleged was that of the train men in not extinguishing the fire. It was held that the railroad was not liable for the refusal of the train men to leave their train and extinguish the fire, as this duty was not within the scope of their employment.—*Genter v. Pennsylvania (Pa.)*, 105 Atl. 824.—Decided January 4, 1919.

Foreign Railway News

Exports of Locomotives in July

Only a few locomotives were exported during July. The following figures compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce shows a total of only 17 valued at \$322,775.

Countries.	Number.	Dollars.
France	4	170,450
Canada	1	3,000
Mexico	2	25,000
Brazil	1	11,100
Chosen	2	18,300
Philippine Islands	7	94,925
Total	17	322,775

French Canals Opened

Water communication between Belgium and the liberated regions along the old battlefield may be considered as re-established, according to a report made to President Poincare by M. Clavelle, Minister of Public Works and Transport. The report states that navigation is almost normal once more along the Aire, Deule, Sensee, St. Quentin and Somme canals; that since the armistice approximately 350 miles of double track railroad and 300 miles of single track line have been re-constructed and only 29 railroad stations remain to be opened to traffic. Among other works completed, it is stated, are 367 bridges which were destroyed during the war.

Electrification of Railway from Christiania to Drammen

The Norwegian Government, writes Consul General Marion Letcher of Christiania, Norway, has recently accepted the bids submitted by three Norwegian firms for the electrification of the railway from Christiania to Drammen. The three companies are: A/S Norsk Electrisk & Brown Boveri; Norsk Maskinindustri, A/S; A/S Per Kure.

The bids include 18 standard gage electric locomotives, which are to be built at Thunes Mekaniske Verksted at Christiania. This is the first definite step to be taken in the plan for the electrification of the entire Norwegian railway system. The power is to be obtained from the Hakavik power station, which is located not far from Kongsberg, Norway, where can be produced about 25,000 horsepower.

Bolivia-Argentina Line to Be Pushed

Announcement is made, says a press despatch from Buenos Ayres, that the Bolivian Legation has concluded preliminary arrangements with the Argentine Government which are calculated to expedite work on the proposed railroad from Formosa, Argentina, to Cochabamba, Bolivia. The line as now planned will have 500 kilometers in Argentina and 850 in Bolivia. English engineers are already at work on the survey and construction is expected to begin as soon as the railroad material market shall have returned to normal.

This line when finished will open up the rich forest lands of the Bolivian and Argentine Chaco, development of which has been anxiously waited for many years. It will also place the Bolivian montaña in easy communication with Buenos Ayres via the extension from Formosa to Embarcacion and will be of great advantage to Santa Cruz, an important city of eastern Bolivia. In addition, this line will provide another transcontinental railroad, for at Cochabamba, a junction will be effected with the Antofagasta Railroad.

Sweden is to get 5,000,000 tons of coal annually from America under an agreement reached with American exporters, according to press despatches from Stockholm. The freight charges on the coal will be about \$25 a ton. Sweden is beginning to feel the lack of coal, due to British restrictions on its shipment from Germany.

Equipment and Supplies

Locomotives

MITSUI & CO., LTD., 65 Broadway, New York, is inquiring for ten Consolidation type locomotives, and six ten-wheel locomotives for the Hankow-Canton Railroad.

THE IMPERIAL KARAFUTA GOVERNMENT has ordered, through Mitsui & Co., Ltd., 65 Broadway, New York, two light locomotives from the American Locomotive Company.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for a second-hand standard gage, consolidation type locomotive, with wheel centers of from 44 to 48 in., cylinders 20 in. by 24 in. or 26 in., a steam pressure of 180 lb., wheel base not over 23 ft., and a tractive power of not less than 26,000 lb.

Freight Cars

THE TREMONT & GULF is inquiring for 10 flat cars.

THE ATLANTIC COAST LINE has renewed an inquiry for 100 50-ton phosphate cars.

THE WESTERN MARYLAND is asking for prices for repairs on about 700 freight cars.

THE MEDART PATENT PULLEY COMPANY, St. Louis, Mo., is inquiring for one flat car.

THE BOSTON (MASS.) ELEVATED RAILWAY COMPANY is inquiring for 2 double-truck snow sweepers.

THE CHESAPEAKE & OHIO is asking for prices for repairs on between 2,000 and 3,000 freight cars.

THE FORKS COAL COMPANY, Portage, Pa., has ordered 25 mine cars from the American Car & Foundry Company.

THE PENNSYLVANIA COAL COMPANY, New York, has ordered 200 mine cars from the American Car & Foundry Company.

THE PITTSBURGH & LAKE ERIE is inquiring for 1,000 hopper car bodies and is also asking prices for repairs to freight cars.

THE CROWN OIL & REFINING COMPANY has ordered 300 40-ton 8,000 gal. tank cars from the American Car & Foundry Company.

THE ESTATE OF JOHN MURRIN, Carbondale, Pa., has ordered 25 mine car bodies from the American Car & Foundry Company.

THE CUBAN CENTRAL has ordered 200 30-ton box cars from the Pressed Steel Car Company and 200 flat cars from the Standard Steel Car Company.

WILLITS & PATTERSON, San Francisco, Cal., have ordered twenty 8,050-gal., 50-ton tank cars, equipped for the shipment of edible oils, from the Standard Tank Car Company, Sharon, Pa.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., wants to lease 15 8,000 to 10,000 gal. tank cars, with coils, for one year from October 15, and will buy or lease 35 acid tank cars.

THE UNITED RAILWAYS OF HAVANA are inquiring for 25 40-ton hopper cars. This company has also ordered 300 30-ton box cars from the Pressed Steel Car Company and 300 flat cars from the Standard Steel Car Company.

Passenger Cars

THE SOUTHERN PACIFIC has ordered 15 baggage cars from the Pullman Company.

Supply Trade News

S. B. Andrews, mechanical engineer of the Seaboard Air Line with office at Portsmouth, Va., has resigned to become vice-president and general manager of the Union Iron Works, Inc., at Berkley-Norfolk, Va.

George A. Cooper, of the sales and advertising department of the United States Graphite Company, Saginaw, Mich., has been appointed advertising and export manager of the Detroit Lubricator Company, Detroit, Mich.

The Pollak Steel Company, Cincinnati, Ohio, has appointed the Lake Shore Engine Works, Marquette, Mich., as its agent for the upper peninsula of Michigan and the E. R. Hensel Steel & Copper Company, Security building, St. Louis, Mo., agents for the St. Louis district.

E. McCormick, treasurer of the Railway Steel Spring Company, New York, has been appointed assistant to the president. H. S. Banghart, assistant treasurer, succeeds Mr. McCormick as treasurer and B. C. Dunn has been appointed assistant treasurer; all will have their headquarters at New York.

The Carborundum Company, Niagara Falls, N. Y., has opened a branch office and warehouse in the Burkhardt building at Second and Larned streets, Detroit, Mich. This branch is under the management of Anthony Dobson, who will have charge of the Detroit sales district.

John F. Schurch, operating vice-president of the T. H. Symington Company Lincoln Park Works, Rochester, N. Y., has been elected vice-president of the same company in charge of all western sales, with headquarters in Chicago. Mr. Schurch graduated from the University of Minnesota in 1893. He entered the service of the Minneapolis, St. Paul & Saulte Ste. Marie the same year, serving consecutively in the office of the auditor, and of the general superintendent and in the transportation departments, resigning in 1905 after having obtained the position of chief clerk to the vice-president. From 1905 until 1914 he was associated with the Railway Materials Company of



J. F. Schurch

Chicago. In February, 1914, he was elected vice-president of the Damascus Brake Beam Company with office in Cleveland, Ohio, and in June, 1914, he was elected president of the same company which position he resigned the same year and was elected vice-president in executive charge under President C. H. Symington of the Symington interests in the production of 75 m.m. guns, shells and forgings. The Symington interest included the Symington Anderson Company, the Symington Machine Corp., the Symington Forge Corp., with office in Rochester, N. Y., and the Symington Chicago Corp., with office in Chicago. In August, 1918, in addition to these offices he was made operating vice-president of the T. H. Symington Lincoln Park Works. Mr. Schurch is also vice-president of the Railway Supply Manufacturers Association.

Lawrence A. Rowe, mechanical inspector on the Atchison, Topeka & Santa Fe, with headquarters at Chicago, has been appointed general manager of the Universal Packing & Service Company, with office at Chicago. The Universal Packing

& Service Company was organized recently to manufacture and sell spring journal box packing and in addition will maintain a service department.

Joel B. Ives of the engineering and contracting department of the **American Steel Export Company**, New York, has just sailed for Italy where he will confer with M. Ferrarris & Co., Italian agents of the company, as to the means and methods for insuring a continuance of the company's sale service in that country.

Louis W. Ulmer, has been appointed eastern railway sales representative of the **Detroit White Lead Works**, with office in Philadelphia, Pa. Mr. Ulmer has recently been released from his duties in the United States Marine Corps. Mr. Ulmer was connected with the **Detroit White Lead Works** before he entered the military service.

E. G. Buckwell, secretary and manager of sales of the **Cleveland Twist Drill Company**, Cleveland, Ohio, has just returned from a three-months visit to England and the Continent, where he has made a thorough trade investigation in conjunction with the **Cleveland Twist Drill Company** of Great Britain, Ltd., London, the European branch of the **Cleveland Twist Drill Company**.

The **American Car & Foundry Company** has purchased two pieces of property adjacent to its plant in Chicago at a consideration of approximately \$90,000, with an encumbrance of \$15,000. One of the properties is 361 ft. by 240 ft. and the other 100 ft. by 240 ft. The company contemplates the building of an addition to the present plant which, together with the rebuilding of the old plant, will cost approximately \$2,000,000.

John D. Rogers has received his discharge as captain of engineers in the office of the director general of military railways in Washington, D. C., and is now in the foreign sales department of the **Baldwin Locomotive Works** at Philadelphia. Prior to entering the army, Mr. Rogers was shop superintendent on the **Virginian Railroad**, having previously served on the **Chesapeake & Ohio**, the **Pere Marquette**, and the **Union Pacific** railroads.

The **Vanadium Corporation of America**, New York, has bought the property and rights of the **American Vanadium Company**, and has elected officers as follows: **J. Leonard Replogle**, president; **Merrill G. Baker**, vice-president; **Lawrence E. Diffenderfer**, treasurer and **Edward F. Nickerson**, secretary. The directors are **Chas. M. Schwab**, **J. Leonard Replogle**, **E. R. Tinker**, **Allan A. Ryan**, **Ledyard Cogswell**, **T. Coleman du Pont**, **Harry Payne Whitney**, and **Joseph D. Wyckoff**. **J. Leonard Replogle** was born in Bedford county, Pa., on May 6, 1876, and was educated in the public schools of Johnstown. He entered the employ of the **Cambria Steel Company** as office boy at the age of 13, and served successively as clerk, shipper, assistant superintendent of the axle department, superintendent of the forge, axle and bolt departments, assistant to the assistant general manager, superintendent of the order department, assistant general manager, assistant to president, and in September, 1912, was elected vice-president and general manager of sales. In February, 1915, he resigned from the **Cambria Steel Company** to become vice-president and general manager of sales of the **American Vanadium Company**, and subsequently became president and general manager of sales of the same company. He is also president of the



J. L. Replogle

Wharton & Northern Railroad, and chairman of the board of directors of the **Wharton Steel Company**. Mr. Replogle, during the war also served as director of steel supplies for the **War Industries Board** and had conferred upon him recently by the **French Government** the decoration of **Chevalier** of the **Legion of Honor** in recognition of the service he rendered for the **Allied cause**.

The **Dunbar Manufacturing Company**, Chicago, has appointed **W. C. Irwin** as district sales representative in St. Louis and the southwest, with offices in the **Frisko building**, St. Louis, Mo. Mr. Irwin has been in the railway supply business for several years and at present is district representative for the **Boss Nut Company**, Chicago, the **Railroad Supply Company**, Chicago, and the **Woven Steel Hose & Rubber Company**, Trenton, N. J. During the war Mr. Irwin was captain in the **Engineer Corps** of the **United States Army**.

Grading and tracklaying have been started at the **Niles**, Ohio, plant of the **Youngstown Steel Car Company**, Haselton, Ohio. Erection of the superstructure of the first unit of the plant, 80 ft. by 400 ft., will begin in the immediate future. The erection of the first building is to be followed by a second of the same size. The new plant will be used for repairing cars for railroad companies and private owners. Industrial cars of smaller dimensions than standard rolling stock will be built early in 1920. It is said the complete new plant will be in operation in January, 1920.

F. H. Crawford, sales manager of **F. H. Niles & Co., Inc.**, Woolworth building, New York, has been appointed secretary, and **J. E. Haetten**, assistant sales manager, has been appointed sales manager. **G. P. Goodman**, who for several years has represented the **Hisey-Wolf Machine Company**, Cincinnati, Ohio, in the East, will become associated, on October 1 with the **F. H. Niles & Co., Inc.**, in charge of its portable tool department. This company handles in the east the **Hisey-Wolf** line of electric machine tools, and the **Canton** pneumatic hammers and drills made by the **Pittsburg Pneumatic Company**, Canton, Ohio.

Otto A. Ruemelin, second vice-president and manager of production of the **Pawling & Harnischfeger Company**, manufacturer of traveling electric cranes, Milwaukee, Wis., died on September 1 after a long illness. Mr. Ruemelin was born in Milwaukee in 1872. He joined the **Pawling-Harnischfeger** interests as an apprentice in 1889. After several years as journeyman, he was made a foreman, serving in various departments. Later he was appointed assistant superintendent and after several years, superintendent. In 1912 he became works manager and later was elected to the second vice-presidency, in which position he served until two weeks prior to his death.

L. R. Custer, formerly development engineer for the **Midvale Steel & Ordnance Company** has been elected a vice-president of the **Cambria Steel Company**. He was born in Altoona in 1873, and graduated from **Cornell University** in 1902. His first work was as a machinist for the **Pennsylvania Railroad**. He later was in the employ of the **Baldwin Locomotive Works**, and then served as a draftsman for the **Jones & Laughlin Steel Company**, Pittsburgh. He entered the service of the **Homestead Steel Company** as a construction foreman and in 1914, was made superintendent of the armor plate department. During the early part of the war he developed the ordnance department of that company. Shortly before the close of the war he left the **Homestead Company** to go with the **Midvale Company**.

Trade Publications

STORAGE BATTERY CARS.—Typical installations of Edison equipped railway storage battery cars are shown in **Bulletin 106**, consisting of 16 pages and issued by the **Edison Storage Battery Car Company**, New York. Illustrations show cars in service in various parts of the **United States**, **Central** and **South America**, **Mexico** and **Alaska**. A short analysis is included of the relative costs of storage battery and steam operation on the **Long Island Railroad** and the **Edison nickel-iron-alkaline storage battery** is described.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This road has awarded a contract for the building of a 15 mile line from Porterville, Cal., to Ducor, to the Sharp & Fellows Contracting Company, Los Angeles, Cal.

BALTIMORE & OHIO, WESTERN LINES.—Sheesley & Janney, contractors, Johnstown, Pa., have been awarded the contract for the construction of a 38 ft. concrete arch bridge over Kellogg Creek, one mile south of Painesville, Ohio.

CHICAGO, ROCK ISLAND & PACIFIC.—Preparations are being made to extend the Chattanooga (Okla.) branch southward 15 miles to Grandfield, Okla., on the Wichita Falls & Northwestern. This branch connects with the Enid-Waurika line at Lawton, Okla.

DAVENPORT, SPRINGFIELD & SOUTHERN.—The company has applied to the Public Utilities Commission of Illinois for authority to construct and operate an electric railroad from Rock Island, Ill., to Metropolis, with branches from Pinckneyville and East St. Louis and other short spurs.

CHICAGO & EASTERN ILLINOIS.—Work has been started on a combined passenger station and freight house at Salem, Ill. It is to be a one-story structure, 28 ft. by 108 ft., and will cost approximately \$20,000. The contractor is T. S. Leake & Co., Chicago, who expect the work to be completed by December.

CANADIAN PACIFIC.—A new station is to be built at Trois Rivières, Que. The building is to be in the French chateau style of architecture and of fireproof construction. The exterior facing is to be of trim brick, with cut stone of Deschambault or similar limestone. The floors will be of marble and terrazzo tile, and the inside walls finished with marble wainscoats with Caen stone or marble above.

GRAND TRUNK PACIFIC.—The Board of Railway Commissioners for Canada has ordered this company to file plans with the board for a station at Prince George, B. C., and to complete and place the proposed station in operation on or before December 31, 1919. Owing to the exigencies of the war and the state of the railway company's finances, the requirements of a similar order issued in November, 1914, were not enforced.

CHICAGO UNION STATION.—Work on the Chicago Union Station, which has been delayed by building trades union strikes for some time, has been resumed. Completion of the viaducts at Twelfth, Taylor, Polk and Harrison streets and of the headhouse at Canal street, is now being rushed and it is expected that contracts will be let in the near future for the erection of the superstructure of the Harrison street and of the Twelfth street viaducts.

ATCHISON, TOPEKA & SANTA FE.—This road is constructing a branch road from its main line at Shattuck, Okla., to Spearman, Tex. Seventy miles of the 84 miles of new construction have been completed. The line is through the extreme upper part of the Panhandle and affords a transportation outlet for a wide stretch of wheat producing territory that was formerly 50 to 75 miles from the nearest railroad point. It is not expected that the line will be extended beyond Spearman for some time.

HONEST LABOR THE REMEDY.—It is not by demands of higher wages for a shorter day's work, by the threat of strikes and by strikes, by wild plans for the nationalization of industries and increased inefficiency of workers at the expense of the taxpayers, that workmen will help themselves and the public. So far as these methods are successful, they cripple production and swell the cost of living. There is but one way to diminish that cost. That is, for every workman to do an honest and a hard day's work. The best labor of every member of the producing community must be given without interruption. The high cost of living can be lowered in that way, and in no other.—*New York Times.*

Railway Officers

Railroad Administration

Operating

S. B. Andrews, mechanical engineer of the Seaboard Air Line, has resigned from railroad service.

Harry D. Mudgett, formerly trainmaster on the Northern Pacific at Livingston, Mont., has recently been released from military service and has resumed his former position, succeeding J. J. Sexton, transferred.

W. G. Curren, special agent of transportation at New York City, has been appointed superintendent of transportation of the Baltimore & Ohio, Eastern Lines, with office at Baltimore, succeeding **H. B. Voorhees**, promoted.

H. B. Voorhees, general superintendent of transportation of the Baltimore & Ohio, has been appointed manager of the Staten Island Rapid Transit, the Staten Island, the Baltimore & Ohio, New York Terminals, and the Baltimore and New York, with offices at New York City, succeeding **J. M. Davis**, resigned to accept service elsewhere.

Traffic

J. O. Adams has been appointed general eastern freight agent of the Grand Trunk, Lines in Canada, with office at New York City, vice **S. E. Dewey**, deceased.

W. C. Douglas, assistant general freight agent of the Michigan Central, with office at Detroit, Mich., has been transferred to Chicago, succeeding **F. J. Parker**, who has resigned to become assistant cashier of the First and Old Detroit National Bank, Detroit. **E. W. Brunck**, chief clerk to the general freight agent of the Michigan Central at Detroit, has been appointed to succeed Mr. Douglas.

V. C. Williams has been appointed division freight agent of the Pennsylvania at Pittsburgh with jurisdiction over: Pittsburgh division, main line and branches, Conemaugh to Pittsburgh inclusive except Southwest branch and Youghiogheny branch; Conemaugh division Cedar Point and Blairsville Intersection to Butler and Karns, to Allegheny, inclusive; Monongahela Division, Pittsburgh to Allenport, inclusive; Cresson division, Josephine only. **J. T. Wray** has been appointed division freight agent at Erie, Pa., with jurisdiction over: Renovo division, Buffalo division. Glade to Ridge View, Sand Co., inclusive. Allegheny division, David Ready to Oil City, inclusive and north of Oil City to Corry, inclusive. Other appointments have been made as follows: **C. T. Mackenson, Jr.**, division freight agent at Pittsburgh with jurisdiction over: Allegheny division, Oil City exclusive, to Kiskiminetas Junction Red Bank to Mix Run, inclusive. Conemaugh division, Pittsburgh to Kiskiminetas Junction, inclusive. **Joseph Weed**, division freight agent at Uniontown, Pa., succeeding Mr. Mackenson, with jurisdiction over: Pittsburgh division, Southwest branch and Youghiogheny branch. Monongahela division south of Allenport.

Engineering and Rolling Stock

Lawrence A. Rowe, mechanical inspector of the Atchison, Topeka & Santa Fe, has resigned to become general manager of the Universal Packing & Service Company, with office at Chicago.

F. C. Hohn, division engineer of the maintenance of way department of the Pennsylvania division of the Delaware & Hudson at Carbondale, Pa., has resigned, effective September 1. Mr. Hohn has been succeeded by **J. C. Dorsey**, division engineer of the Saratoga division of the Delaware & Hudson at Albany, N. Y.

L. R. Wink, general foreman of shops on the Galena and Wisconsin divisions and the Chicago terminals of the Chi-

cago & North Western, has been appointed assistant superintendent of the car department, with headquarters at Chicago, and **C. J. Nelson** has been appointed general foreman, succeeding Mr. Wink.

R. B. Johnson, assistant engineer on the Montana division of the Oregon Short Line has resigned to enter private practice at Idaho Falls, Idaho, and **A. H. Hault**, has been appointed his successor. **R. B. Reasoner**, formerly division engineer on the Oregon Short Line with headquarters at Pocatello, Ohio, has recently been released from military service and has resumed his former duties.

G. A. Carroll, formerly divisional engineer of the El Paso division of the Chicago, Rock Island & Pacific, recently discharged from military service has been appointed division engineer of the same road at Eldon, Mo., succeeding **W. A. Wallace**, who is appointed division engineer of the Nebraska division with headquarters at Fairbury, Neb. **A. G. Bradley**, formerly division engineer of El Reno, Okla., also discharged from military service recently, has been reappointed to the same position, succeeding **G. H. Pash**, assigned to other duties.

John Edward Fanning, whose appointment as chief engineer of the Gulf & Ship Island and the Mississippi Central with office at Hattiesburg, Miss., was announced in the *Railway Age*, September 5, page 490, was born at Okolona, Miss., on August 13, 1885, and was educated at the University of Mississippi. He entered railway service in 1905 with the Gulf & Ship Island and was successively transit man, assistant engineer and supervisor of track. In 1910 he was appointed assistant engineer, in which capacity he served until 1917, when he went to the Illinois Central.

C. H. Paris, assistant engineer on the Chicago & North Western, with office at Huron, S. D., has been transferred to Winona, Minn., succeeding **R. D. Anderson**, promoted. **L. B. Dodge**, assistant engineer, Galena division, with office at Chicago, has been transferred to Huron, S. D., succeeding **C. H. Paris**. **C. H. Wells**, assistant engineer in the valuation department, has been transferred to the Galena division, succeeding **L. B. Dodge**. **R. D. Ransen** has been transferred from the federal manager's office in Chicago as assistant engineer to the valuation department, succeeding **C. H. Wells**.

C. J. Wymer, sales representative of the Grip Nut Company of Chicago, has been appointed superintendent of the car department of the Chicago & Eastern Illinois, with headquarters at Danville, Ill. Mr. Wymer entered railroad service in 1891 with the Atchison, Topeka & Santa Fe. He later became connected with the car inspecting department of the Chicago & Eastern Illinois, resigning as general car inspector in 1912. He was then appointed general car foreman on the Belt Railroad of Chicago. In May, 1916, he was appointed sales representative at the Chicago office of the Grip Nut Company, in which capacity he served until his recent appointment. Mr. Wymer's appointment places him in entire charge of the car department of the Chicago & Eastern Illinois and is the first appointment of this nature made by that road.

Leonard L. Sparrow, whose appointment as principal assistant engineer of the Atlanta Coast Line, with headquarters at Wilmington, N. C., succeeding **T. L. Morton**, deceased, was announced in *Railway Age* of September 5th, was born in November, 1872, at Philadelphia, Pa. Mr. Sparrow is a graduate of the University of Tennessee. In 1895 he entered the employ of the Baltimore & Ohio as rodman on the Philadelphia division and the next year was transferred to the second division with headquarters at Martinsburg, W. Va. From 1899 to 1904 he was assistant engineer and resident engineer on surveys and grade reduction work on that road and in May, 1904, he left the Baltimore & Ohio to take charge of the construction of terminals at Jacksonville, Fla., for the Atlantic Coast Line, remaining in that position until 1907 when he was appointed engineer of roadway, first division, with headquarters at Rocky Mount, N. C., being transferred in August, 1908, to the third division with office at Jacksonville, Fla., in charge of maintenance of all lines in Florida. In September,

1917, he was appointed office engineer in the office of the chief engineer at Wilmington, N. C., which position he held at the time of his recent appointment.

Purchasing

T. C. Hopkins has been appointed local storekeeper of the Baltimore & Ohio at Cleveland, Ohio, succeeding **L. F. Ryan**, resigned.

J. M. Strong has been appointed division storekeeper of the Schuylkill division, Pennsylvania Eastern Lines with headquarters in Reading, Pa.

J. A. Laughlin and **Henry Stephens** have been appointed assistant general storekeepers of the New York Central, Lines West of Buffalo, with headquarters at Collingwood, Ohio. Mr. Laughlin has been storekeeper at Elkhart, Ind.

Corporate

Engineering and Rolling Stock

H. K. Morrison, resident engineer on the Superior division of the Canadian National Railways, with office at Hornepayne, Ont., has been appointed division engineer, a newly created position, with the same headquarters.

F. S. Rosseter, assistant superintendent of the Sudbury division, Altoma district, of the Canadian Pacific, with office at Sudbury, Ont., has been transferred to the Toronto terminal division, Ontario district, with headquarters at West Toronto, Ont., succeeding **W. J. Stinson**, who has been transferred to the Trenton division, Ontario district, with headquarters at Havelock, Ont. Mr. Stinson succeeds **R. de B. Girouard**, who has been transferred.

Obituary

Hon. Francis Cochrane, former Canadian Minister of Railways and Canals, died at his home in Ottawa, Ont., on September 22, at the age of 67. Mr. Cochrane was born in Clarenceville, Que. He had been connected with the government for about 15 years, and in 1905 was minister of lands and mines. He was appointed to the Ministry of Railways in 1911.



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Scenes from Foreign Ports. Loading Hides at Maracaibo, Venezuela

Railway Age

EMERGENCY BULLETIN

PUBLISHED BY THE SIMMONS-BOARDMAN PUBLISHING COMPANY
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October 6, 1919

Special Strike Bulletin.

As stated in the editorial "Another Strike!" on page 603 of the September 26 issue of the *Railway Age*, we have suspended publication indefinitely because of a strike called for the reason that we refused to meet the arbitrary and unreasonable demands of certain printing trades' unions who flatly refused to arbitrate and whose members deserted the presses in the face of existing contracts.

And as promised in that editorial, it is our purpose to make certain that both subscribers and advertisers are kept informed of happenings in the railway field which seem to us of special interest to each.

Hence this, the first of a series of bulletins which will be published at least once a week during the suspension of the paper, and more frequently, if necessary.

Organized Labor Versus Organized Society!

The entire civilized world is today following with intense interest the railroad strike in Great Britain and the steel mill strike in the United States. This is the case because the civilized world is keenly alive to the fact that these strikes do not involve merely the wages and working conditions of working people, but are tests of the relative strength of organized labor and organized society in the two leading Anglo-Saxon countries.

This is more clearly true of the railroad strike in Great Britain than of the steel strike in this country. In Great Britain the Government is operating the railroads. The employees made certain demands which the Government refused to grant and almost without warning the strike order was put into effect. Premier Lloyd George has leaned toward the workers in almost all their disputes with capital. Nevertheless, he has denounced the railroad strike. The "precipitancy" with which it was entered upon "caused the impression" he declares, "of a deliberate and mature intention on the part of some individuals to seek a quarrel at any cost."

There is no doubt in the mind of any intelligent observer as to the reason for seeking a quarrel. Organized labor in Great Britain is dominated by radicals who are trying to bring about syndicalism—that is, government ownership of industries and their management by, and primarily for the benefit of, the employees. These radical leaders have been calling one great strike after another since the war ended in an effort to force the adoption of syndicalism. The recent strike in the British coal mines, which also were being operated by the Government, was ordered by the same element for the same purpose.

The steel mills of the United States are not being operated by the Government. The strike in them has been brought about, however, by the same kind of leaders who have caused the coal and railroad strikes in Great Britain, and for the same general purpose. The principal organizer of the steel workers and promoter of the strike was formerly

an organizer for the I. W. W. and has been preaching syndicalism for years. Samuel Gompers and other leaders of organized labor who have claimed to be, and have been regarded as, conservative, deny that the steel strike has any revolutionary purpose. But it is evident that, for the present at least, men such as Gompers have lost control of the organized labor movement in the United States. Mr. Gompers has opposed the espousal of socialism by the American Federation of Labor; but recently the United Mine Workers of America and the railway labor brotherhoods have begun advocating what would be practically syndicalism on the railroads and in the coal mines. The character of the men who are leading the steel strike is evidence enough that if they should succeed in making organized labor as strong in the steel mills as it is on the railroads and in the coal mines, it would be but a short time until we should be confronted with demands for syndicalizing the steel mills similar to those which already have been made with respect to the railroads and the coal mines.

The situation in Great Britain and the United States raises two vitally important questions. The first is as to whether the people of these countries want the syndicalistic or Bolshevistic system of industry substituted for the system of private ownership and management. That is an economic and political question which is open to argument. If organized labor, by ordinary political methods, can get a majority of the people to favor the syndicalist system, it has a right to do so. The syndicalist system might work well or ill, but if a majority of the people want it, it ought, on democratic principles, to be established.

The second and more important question which the present situation in Great Britain and the United States raises is whether the system of syndicalism is going to be imposed upon the public by force, regardless of whether the public want it or not. It is idle to say that no attempt to impose it by force will be made. Such attempt actually is being made in Great Britain right now. The railroad strike in that country is an obvious and audacious attempt to starve the public until it will compel the Government to yield to the demands of the strikers. That may not be exactly the use of force, but if the Government attempts to operate the railroads with non-union men the strikers undoubtedly will interfere with, and try to maim and even kill the "scabs," and there is no doubt that this would involve the use of force.

It may be said, and truly, that the leader of the steel strikers has offered to arbitrate. But the railroad labor brotherhoods used to demand and insist upon arbitration. When, however, they thought they had become strong enough to enforce their demands by strikes and threats of strikes they began absolutely to refuse to arbitrate. Experience seems to show that, under the kind of leadership it now has, organized labor will submit its claims to arbitration only when it seems practically certain that it cannot win by the strike. But if syndicalism is to be established or any other great change in our industrial or political system is to be

made, not by political methods but by force, then those who have become able by the use of force to effect the change have overthrown the Government and have substituted their sovereignty for that of the people.

The first question to be settled, therefore, is whether organized labor is going to be able, by the use of the strike, to bring about an industrial and political revolution—or is even going to be allowed to try to bring it about—by force. If organized labor wins in such struggles as that of the railroad workers with the Government in Great Britain and that of the steel workers with the steel companies in the United States, there undoubtedly will be an increase in the use of the strike and of strike violence for revolutionary purposes until either the present industrial and political system is overthrown or organized society rises in its full strength and subjects organized labor to some form of control which will make the use of the strike for revolutionary purposes impossible.

In this great crisis it is essential that the people should clearly understand the issue presented and align themselves accordingly. Organized labor, under radical leadership, is trying to impose its will upon organized society by force. The avowed ultimate object of its radical leaders is the overthrow of the present industrial and democratic political system, and the establishment of an industrial and political autocracy of the proletariat. As long as organized labor submits to such leadership, and uses the methods its radical leaders favor, the rest of the people, however friendly their attitude toward organized labor may have been in the past, must, as a matter of self-protection, take a united stand against organized labor.

Relation of Freight Charges to Commodity Values

The argument has been made by some persons in high official positions that freight rates ought not be advanced, even though an advance may be necessary to prevent a railroad deficit, because an increase in the freight rate would increase the cost of living. A most striking demonstration of how little influence freight rates have upon the cost of living is made in a letter which Julius Kruttschnitt has written to Chairman Esch of the House committee on Interstate and Foreign Commerce. Briefly, Mr. Kruttschnitt shows that in 1914 the average value per ton of freight carried on the railroads of the United States was \$56 and that the average rate on it was \$2 per ton, which was 3.6 per cent of the value of the freight. In 1919 the average value of a ton of freight is \$119 and the average freight charge on it only \$2.80, which is but 2.4 per cent of the value of the freight. Between 1914 and 1919 the average value of a ton of freight increased \$63, while the average charge on it increased only 80 cents. Therefore, the increase in the average freight charge per ton was only 1.3 per cent of the increase in the value of the freight. Mr. Kruttschnitt shows that between 1899 and 1900, when commodity prices in general advanced, freight rates were unchanged; between 1907 and 1908, when there was a fall in prices, freight rates were declining; that between 1915 and 1916, when there was a further increase in prices, freight rates were still declining; in 1916 and 1917, when prices were higher than at any time in 19 years, freight rates were lower than at any time in 19 years. He also shows that the sharp advance in freight rates in 1918 was followed by a decline in prices. The explanation, of course, is that the freight charge is so very small in relation to the average value of commodities that it would take a relatively enormous change in rates to affect prices. It is a notable fact that in 1914 the freight charge was 3.6 per cent of the average value of commodities, while in 1919 it was only 2.4 per cent, which demonstrates that if

freight rates were advanced at the present time exactly 50 per cent they would be made only as large relatively to the value of commodities as they were five years ago.

Agreement Entered Into With the Shop Employees

For the first time the railroads of this country, through the Railroad Administration, have entered into a national agreement with the shop crafts as represented by the Railway Employees' Department of the American Federation of Labor and its affiliated organizations of the Mechanical Section and Divisions 1, 2 and 3 thereof, including the International Association of Machinists, International Brotherhood of Boilermakers, Iron Shipbuilders and Helpers of America, International Brotherhood of Blacksmiths and Helpers, Amalgamated Sheet Metal Workers' International Alliance, International Brotherhood of Electrical Workers and the Brotherhood of Railway Car Men of America.

The agreement includes 186 rules. The first section covers general rules applying to all trades and is followed by special rules for the machinists, boilermakers, blacksmiths, sheet metal workers, electrical workers and carmen. The wages have been raised to put them on an equal basis with wages paid to other railroad employees. The rate for mechanics who have been receiving 68 cents an hour has been increased four cents an hour; steel car workers and other mechanics in the car department who were receiving 63 cents an hour have been increased four cents an hour; other mechanics in the car department who were receiving 58 cents an hour will be increased nine cents an hour. In all cases these increases are effective as of May 1, 1919. Apprentices, helpers and other classes of workmen covered by Supplement 4 to General Order 27 have been increased four cents an hour, effective May 1, 1919, except for linemen and others, ground men, coal pier elevator operators and coal pier electric hoist operators, who are covered by special rules.

Hearings Before the House Interstate Commerce Committee

Interstate Commerce Commissioner Edgar E. Clark appeared before the House Commerce Committee on Interstate Commerce on September 25 and 26. He denied that regulation of railroad rates had operated to reduce revenues, and thought that the only thing that could be done with the weak roads was to put them through a reorganization.

A. P. Thom, general counsel for the Association of Railway Executives, introduced a letter from Charles E. Hughes, formerly Justice of the Supreme Court of the United States, expressing an opinion on the provision of the Cummins Bill which would take away all of the profits of a successful road above a certain fixed percentage. Justice Hughes' opinion, in brief, is that if rates which produce so-called excess earnings are just and reasonable rates, as they are presumed to be when fixed and regulated by a public authority like the Interstate Commerce Commission, then the earnings from those rates are the property of the railroad companies. They may be taxed, but they cannot be taken away. This would be confiscation.

Mr. Thom took up the question of the relation of state rates to interstate rates. He thought that it was absolutely essential that one federal body should be given jurisdiction over the rates on every interstate carrier, whether the carrier itself was wholly within one state or not, and whether the haul was wholly within one state or not. He said, however, that if at this time Congress did not wish to go so far as to make a specific declaration of this scope, there should be an amendment made to the Esch Bill to provide (1)

that the carrier should have the right to complain to the Interstate Commerce Commission against the state rate, (2) that not only discrimination but inequality and undue burden on other rates could be complained of in regard to a state rate, and (3) to confer power on the Interstate Commerce Commission to suspend intrastate rates and to grant reparation in respect to such rates.

June Mechanical Conventions

The General Committee of the Mechanical Section of the American Railroad Association held a meeting at the Hotel Traymore, Atlantic City, N. J., on October 23 and 24, at which, among other business, the plans for the next convention were laid. A joint conference was held with a committee of the Railway Supply Manufacturers' Association and the Hotel Men's Association of Atlantic City, and it was decided to hold the 1920 and 1921 conventions on Young's Pier. The dates selected for the 1920 convention are June 9-16. The first three days of this period will be devoted to papers on locomotive subjects and the last three to car subjects, consolidated committees reporting on Monday, June 14. An invitation was extended to Section VI, Purchases and Stores, to hold its convention simultaneously with Section III, in order that the members might avail themselves of the opportunity to visit the extensive exhibit. A number of new committees were appointed and important changes were made in the personnel of others.

The Railway Supply Manufacturers' Association will hold its usual exhibit. The following committee appointments have been made by the executive committee of that association: Chairman exhibit committee, J. G. Platt, Hunt-Spiller Manufacturing Corporation, South Boston, Mass.; chairman entertainment committee, W. K. Krepps, Crucible Steel Company of America, New York; chairman enrollment committee, C. H. Gayetty, Quaker City Rubber Company, Philadelphia, Pa.; chairman finance committee, George A. Cooper; chairman transportation committee, John C. Kuhns, Burden Iron Company, Troy, N. Y. John D. Conway was re-elected secretary-treasurer of the association. The management of the Young's Pier at Atlantic City has agreed to enlarge the seating capacity of Convention Hall from 600 to 850.

Railway Business Association on Railroad Problem

Alba B. Johnson, president of the Railway Business Association, has sent to Senator Joseph S. Frelinghuysen a letter commenting on and comparing certain vital points in the Frelinghuysen and Cummins bills. These comments relate particularly to the transportation board, consolidation of roads, regulation of security issues, the adequacy of revenue and the dangers involved in the six per cent return. President Johnson has also sent a letter to Congressman John J. Esch, chairman of the House Committee on Interstate and Foreign Commerce, emphasizing certain recommendations of the Railway Business Association and commenting upon the testimony of Guy M. Freer, president of the National Industrial Traffic League.

President Rea Addresses Bankers

Samuel Rea, president of the Pennsylvania Railroad Company, made an address on "Our Railroad Problem" before the Savings Bank Section of the American Bankers' Association at St. Louis, Mo., on October 1. He outlined the plan of restoring the railroads as advocated by the Association of Railway Executives and went into a very thorough discussion of the Cummins bill, particularly in relation to the objectionable features from the standpoint of the railway executives.

A Great Railroad Strike in Britain

The railways of England, Scotland and Wales were paralyzed on Friday, September 26, by the most complete strike in their history, and all the business of the country was disorganized for several days; but as we go to press it seems certain that the strike will fail. Sir Eric Geddes, in control of the railways for the Government, took a firm stand from the outset, and was vigorously sustained by the Ministry; people and press condemned the strikers with substantial unanimity. The two largest unions joined in the strike, the National Union of Railwaymen, and the Society of Engineers and Firemen. The stoppage of suburban traffic and of all trains on the London underground railways caused extensive curtailment of activities in shops and offices in London and to a less extent in other cities. No serious violence was reported. David Lloyd George, prime minister, declared that the leaders were striking against society, and were seeking a quarrel at any cost; he was convinced that a vast majority of union labor was opposed to the movement, which he described as an anarchist conspiracy.

It was estimated that the strikers numbered about 600,000. The Government at once suspended the demobilization of the military forces and prepared to run trains with volunteers. By Monday, the 29th, it was said that the Government had the situation well in hand. Automobiles were brought into use by the thousands for the transportation of food, and the Government proceeded as it would have done in case of an invasion by a foreign enemy. Airplanes were used extensively to carry mails. Over 80,000 private motors were offered to the Government. Making use of the services of volunteers, the principal railways ran some passenger trains on Monday, all train movements being made at long intervals because of the signalmen being on strike. Partial train service was resumed on two underground lines on Monday evening. Along the coast the Government used naval vessels to carry mails.

Passenger service was first restored for suburban travel; but by Tuesday most of the main lines ran a few through trains, and the Great Western declared that its service was almost normal. The airplane mail service between London and Paris, which had been running three times a week, was at once put on a daily timetable.

On Wednesday, October 1, the Ministry of Transport announced that the number of passenger trains run on that day was about 2,000, or double the number in service on the preceding day. This was exclusive of the London underground service, which was much improved. Of the large numbers of men at work on the trains the reporters were unable to decide what portion was made up of volunteers and what of returning strikers.

Though the Government made continual progress, there was, of course, much disorganization, and even on Wednesday the large London newspapers printed only four pages each.

Obituary

John J. Reardon, superintendent of the Litchfield & Madison, died at his home in Edwardsville, Ill., on September 19, at the age of 57.

John B. Brownell, formerly assistant general auditor of the Delaware & Hudson, died suddenly at his home in Altamont, N. Y., on September 12.

Eugene Chamberlain, who recently retired from the position of manager of the Equipment Clearing House of the New York Central Lines, died at his home in Mount Vernon, N. Y., on September 30, after a long illness, at the age of 70.

Frank H. Clark Goes to China

Frank H. Clark, consulting engineer, New York city, and formerly general superintendent motive power of the Baltimore & Ohio, is shortly going to Peking, where he will temporarily act as technical adviser to the Ministry of Communications of the Republic of China.

International Trade Conference

This conference, which was called by the Chamber of Commerce of the United States to meet at Atlantic City the first week in October, has been postponed until Monday, October 20. This was necessary because of delays in the departure of delegates from Italy, France and Belgium.

Fiftieth Anniversary of the Westinghouse Air Brake Company

Over 800 veterans of the Westinghouse Air Brake Company and its subsidiary companies in Milwaukee, St. Louis, California, Pittsburgh and Canada met at the William Penn Hotel, Pittsburgh, Saturday evening, September 27, to celebrate the fiftieth anniversary of the formation of the Westinghouse Air Brake Company.

Official Changes

Charles H. Markham, director of the Allegheny region, has resigned from the Railroad Administration to return to the presidency of the Illinois Central; he is succeeded by L. W. Baldwin, heretofore operating assistant to Mr. Markham.

H. M. Adams has resigned as traffic assistant to the regional director of the Southwestern region, and has been appointed vice-president of the Union Pacific, in charge of traffic, with office at Omaha.

C. B. Porter has been appointed acting purchasing agent of the Texas & Pacific and allied lines, with office at Dallas, Tex., R. I. Irwin, purchasing agent, having been granted leave of absence.

J. M. Rosevear, general auditor of the Grand Trunk, has been appointed controller, in place of W. H. Ardley; and J. B. McLearn, auditor of revenue, succeeds Mr. Rosevear.

W. A. Parker, division engineer of the Kansas division of the Union Pacific, with office at Marysville, Kans., has been promoted to assistant engineer, maintenance of way, with headquarters at Omaha, Neb.

William H. Menner, road foreman of engines of the Erie, with headquarters at Jersey City, N. J., has been appointed supervisor of locomotive operation, succeeding E. Salley, deceased.

A. G. Miller, chief travelling auditor of the Nashville, Chattanooga & St. Louis, has been appointed auditor of disbursements, succeeding J. H. McEwen, deceased.

W. C. Dorsey, senior accountant for Clink, Bean & Co., accountants, San Francisco, Cal., has been appointed auditor of expenditures on the Chicago, Milwaukee & St. Paul, with office at Chicago, succeeding F. G. Allen, resigned.

Supply Trade News

The Buda Company has opened branch offices in Buenos Aires, Brazil; London, England; and Paris, France.

C. N. Replogle has resigned as general manager of the Ralston Steel Car Company, Columbus, Ohio, to become general manager of the new plant of the Timken Roller Bearing Company, Canton, Ohio.

The Boston & Maine has ordered 360 tons of steel from the American Bridge Company, for bridges to be built at Winchendon, Mass., and at Webb, N. H.

Fred J. Holden has been promoted to sales manager of the Railway Division of the B. N. Jones Company, Inc., with office at 192 Chambers street, New York City.

The Canadian Pacific has awarded a contract to the Union Switch & Signal Company, Swissvale, Pa., for the complete installation of two Saxby & Farmer interlockings at Brantford, Ont.; one of 24 levers and one of 20.

The Canadian National has awarded a contract to the Union Switch & Signal Company, Swissvale, Pa., to remodel the mechanical interlocking at the Grand Trunk crossing, Elm street, Port Colborne, Ont.

Mitsui & Co., Ltd., 65 Broadway, New York, has given an order to the McClintic-Marshall Company, New York, for 2,100 tons of steel for bridges, to be built on the South Manchurian Railroad. There will be 32 spans, varying in length from 65 feet to 110 feet each.

The United States Railroad Administration has placed an order for 200,000 tons of steel rails. This has been allocated between the United States Steel Corporation, the Bethlehem Steel Corporation, and the Lackawanna Steel Company. The exact division of the rail order has not yet been announced.

Freight Car Inquiries.—Morris & Co., Chicago, is inquiring for 400 refrigerator cars. The Oklahoma Iron Works, Tulsa, Okla., is inquiring for one special 36-ft. 30-ton flat car. Charles E. Sharp, St. Louis, Mo., is inquiring for 50 steel cane cars for export to Mexico. The American Industrial & Development Company, Inc., New York, is inquiring for two special flat cars for export to France.

Freight Cars Ordered.—The American Car & Foundry Company has received the following orders: 50 mine cars, from the Hillside Coal & Iron Company, Scranton, Pa.; twenty-five 40-ton tank cars from the Sterling Oil & Refining Company; twenty-five 40-ton tank cars from John H. Witte & Sons, Minneapolis, Minn.; twenty-five mine cars from the Pennsylvania Coal Company.

Locomotive Deliveries.—New locomotives shipped by manufacturers to railroads under federal control are reported, for the week ending September 13, as follows: By the American Locomotive Company, to the Atlantic Coast Line, 6 engines, U. S. R. A., Pacific. By the Lima Locomotive Works to the Missouri Pacific, 5, U. S. R. A., Mikado. By the Baldwin Locomotive Works to the Pennsylvania Lines West, 3, and to the Lehigh Valley 5 Santa Fe type; to the Norfolk & Western, 1, and to the Wheeling & Lake Erie, 1, U. S. R. A., Mallet; and to the Seaboard Air Line, 1, U. S. R. A. Santa Fe type. Total shipments, 22 locomotives.

Railway Construction.—The Portland, Astoria & Pacific is constructing a 32-mile railroad from Wilkesboro, Oregon, to Keasey. The Chicago, Milwaukee & St. Paul has begun work on additions to its yards at Sioux City, Iowa. The Cisco Banking Company, Cisco, Tex., is constructing a road from Cisco into the oil fields of Stephens county, a distance of about 35 miles, to be known as the Cisco & Northeastern. Articles of incorporation have been approved by the Attorney General of Texas for the Panhandle Short Line; construction will start in the near future between Dalhart, Tex., and Lubbock; the financial and purchasing agent is S. M. Porter, Caney, Kan. Jake L. Hamon of Ardmore, Okla., and Frank Kell, of Wichita Falls, Tex., are constructing a railroad from New Castle, Tex., to Dublin, through Breckenridge and Ranger; the project comprises the construction of 105 miles of main line, to be known as the Wichita Falls, Ranger & Fort Worth.

Railway Age

EMERGENCY BULLETIN

PUBLISHED BY THE SIMMONS-BOARDMAN PUBLISHING COMPANY
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October 13, 1919

This is the second issue of our Emergency Bulletin. Labor difficulties still persist in the printing industry in New York City and we are unable to predict when the RAILWAY AGE will resume publication.

Roads Will Be Returned January 1

Director General Hines has sent a letter to Chairman Esch of the House Committee urging early legislation to determine the status of the railroads in order to avoid uncertainty and consequent demoralization of service. If such a bill is not passed before the end of the year he indicates that it would be impracticable for the Government to retain the roads and he says that the corporations will be greatly hampered in their plans for next year unless legislation is enacted.

'Longshoremen's Strike at New York

Freight traffic at the port of New York has been seriously disturbed since October 1 because of suspension or congestion of ocean commerce. Because of the railroad strike in England, the Shipping Board cancelled all sailings for Great Britain, and the Railroad Administration was obliged to put a partial embargo on shipments from the interior for export; that is to say, the permit system was revived and no shipments were accepted until it was certain that vessel room would be ready. Before this difficulty was removed, following the settlement of the English strike, many thousands of longshoremen at New York left their work; and on Wednesday, October 8, all permits for shipments of freight to New York, either for export or for coastwise vessels, were suspended. This will stop a movement amounting normally to about 6,000 cars a day. The grain movement, to a large extent, was not affected. The strike is not authorized by union leaders and the situation is confused but an early settlement is hoped for. But by the 11th, the trouble had spread to other ports and at New York the railroad passenger ferries stopped running.

Railroad Legislation Still in Doubtful Stage

Observers of the progress of the two Congressional committees that are wrestling with the railroad problem are becoming increasingly doubtful as to whether any comprehensive railroad legislation is to be expected at this session of congress, which Congressional leaders are now talking of adjourning possibly by the first part of November. At the same time it is realized that to throw the railroad question into the regular session which begins in December would be to give little chance for the passage of a bill before January 1.

It is not believed that the Congressmen more directly interested in railroad legislation are planning to postpone action. On the contrary, members of the interstate commerce committees of the two houses are working hard in the effort to prepare bills that can be passed before any question can be raised as to the return of the roads to their owners on

the date announced by the President; but many of their colleagues think it is not possible to reach an agreement in the time available and have already begun speculation as to whether that state of affairs would cause a change in the president's plans. The Railroad Administration, however, is proceeding on the assumption that the roads are to be returned as the President has stated and reiterated, and is making various preparations to that end, although with a realization that probably a considerable part of its organization will be needed for some time after the actual relinquishment of federal control to wind up its affairs and adjust the numerous problems that will remain to be straightened out. The administration does not desire to retain control of the roads for an uncertain tenure and is understood to believe that it would be better to relinquish them even without legislation than to continue the uncertainty.

The House committee concluded its hearings on reconstruction railroad legislation on September 26, although it held another hearing on October 4 to give the labor representatives another chance to object to compulsory arbitration. A sub-committee, consisting of Chairman Esch and Representatives Winslow, Hamilton, Sims and Barkley, was appointed to draft a bill for consideration by the full committee and has since been busily engaged on its work in executive session. The Esch-Pomerene bill representing the Interstate Commerce Commission's ideas as to needed amendments to the act to regulate commerce is still being taken as the basis, but it had long been apparent to most members of the committee that something more fundamental would have to be added to it; and much consideration is being given both to the problem of assuring adequate revenues and to some basis for adjusting labor controversies without strikes. Chairman Esch has indicated that he is in favor of strengthening his bill so as to assure adequate revenues and credit to the carriers, and Commissioner Clark, who represented the commission at the hearings and who admitted from the start that the Esch-Pomerene bill did not attempt to cover the whole ground, finally took the position that it would be desirable to have a recognized standard of measurement of railroad return, fixed by Congress as a matter of public policy rather than by an administrative body, and said that of various plans proposed for establishing such a standard he would prefer the Warfield plan.

The Senate committee, which has been holding frequent sessions on the Cummins bill, has indicated a hope that it would be able to report a bill by the middle of this month. Its principal struggle has been with the provisions intended to establish an adequate basis of rates and while the original bill left the fixing of the standard return with the Interstate Commerce Commission the committee has recently come around to an effort to establish a standard itself.

The work of the committee is still in a tentative stage but considerable progress has been made during the past two weeks and it is understood that the original provision for an absolute limitation of railway return has been definitely abandoned and that a tentative agreement has been reached

on a provision for a rate basis to produce 6 per cent. and for a division of the earnings above that requirement, the proportion to be retained by the company decreasing as the amount above 6 per cent. increases. The committee has also adopted a provision giving the Interstate Commerce Commission a power of suspension over State rates during the five months' period of readjustment provided in the bill. In spite of the protests of the labor leaders, the Senate committee has decided to retain the anti-strike provision in the bill.

Hearings Before the House Interstate Commerce Committee

Samuel Gompers, president of the American Federation of Labor, testified before the committee on October 4 in opposition to any provision that may be inserted in the Railroad bill providing for compulsory arbitration. Arbitration, he said, must be voluntary or it cannot be successful, and labor must always have the right to strike. Mere discussion of such legislation is likely to produce serious consequences by giving the radical element the means of undermining the more conservative element.

W. N. Doak, vice-president of the Brotherhood of Railroad Trainmen, also opposed any kind of compulsory arbitration and said that Congress ought not to "start anything" that would further alienate labor and capital. He said a get-together conference between railroad operators and employees is probable after the railroads are given up by the Government and that voluntary agreements without additional legislation will prove more satisfactory.

S. Davies Warfield, president of the National Association of Owners of Railroad Securities, has filed with both the Senate and House committees on interstate commerce an opinion by Elihu Root, John G. Milburn, John S. Miller, Hugh L. Bond, Jr., and Forney Johnston, advisory counsel of the association, that Congress has the constitutional power to regulate excess earnings of railroads over and above a fair return upon the value of their property. The opinion takes decided issue with that recently furnished by Charles E. Hughes, and states that such excess earnings are the result of rates made to meet the actual necessities essential to the preservation of the life of the transportation system of the country.

Director General Suggests That Railroad Companies Prepare for Rate Advance

Director General Hines has disposed of various rumors of an impending general advance in freight rates by announcing in a letter to T. De Witt Cuyler, chairman of the Association of Railway Executives, that it will be impossible for the Government to establish any general readjustment of rates prior to January 1, 1920, the date set for the return of the roads to their owners, but that if the corporations desire to make progress at this time with preparations for an advance he will assist them by placing the traffic organizations of the Railroad Administration at their disposal for a study of the problem to determine what tariffs they think ought to be proposed.

Mr. Hines is thus passing to the railroad companies the responsibility for proposing a rate advance to meet the increase in railroad expenses that has occurred during federal control, but in his letter, dated October 7, he states the reasons why he considers that such a step is necessary. He has long made it plain that he did not consider the earnings of the first half of this year to afford a proper measure for the advance to be made, but shippers and others have felt so certain that an advance was being contemplated that both Houses of Congress have passed the Cummins bill to take out of his hands the war power to order increases without the approval of the Interstate Commerce Commission. The bill restoring

the commission's suspension power was passed by the House with amendments to the Senate bill and, therefore, required a conference to reconcile the differences, but the conferees have agreed and their report only awaits final passage, which was expected possibly this week, and at any rate could certainly be passed before the director general could get out a rate order.

Capital and Labor in Conference at Washington

The conference of representatives of employers, employees and the public called by President Wilson for the purpose of reaching, if possible, "some common ground of agreement and action with regard to the future conduct of industry" and "means of bettering the whole relationship of capital and labor" began its sessions at Washington on October 6 but spent the first three days in getting started. After organizing and adopting rules to govern its procedure which required that any proposal to be made to the conference should first have the assent of one of the three groups, the conference adjourned on Wednesday morning until Thursday in order to give the groups an opportunity to hold meetings.

Franklin K. Lane, Secretary of the Interior, was elected chairman and Lathrop Brown and J. J. Cotter secretaries. A general committee was chosen consisting of five representatives of each group which is to pass upon all proposals made to the conference which have first received the assent of the group in which they originate, and voting is to be by groups, while a majority vote in each of the three groups is a prerequisite for any expression or conclusion by the conference, although one-third of any group may express itself in a minority report. The plan of group voting operates against a possible combination of the public group with that representing either the employees or labor and the manner in which the rules were adopted indicated the greatest caution on the part of both the labor and the employers' group to prevent any action by the conference to which they could not assent.

The members of the conference were not selected with reference to particular industries but after the railroad labor organizations had demanded and had been given more direct representation than that of the delegates selected by Mr. Gompers, two delegates were appointed by the President to represent the railroads, R. H. Aishton, regional director of the Northwestern region of the Railroad Administration and Carl R. Gray, president of the Western Maryland, who was director of the Division of Operation during 1918. L. F. Loree, president of the Delaware & Hudson, is also a member of the employers' group as one of the five selected by the National Industrial Conference. Fifteen labor delegates were selected by Mr. Gompers but the railroad organizations demanded a representative for each of their 14 organizations. By a compromise suggested by Director General Hines, the train service brotherhoods were invited to select four representatives and Bert M. Jewell, acting president of the Railroad Employees' Department of the American Federation of Labor, was named as one of the public representatives by the President.

For a time the brotherhoods threatened to stay away but when the roll was called they were found represented by H. E. Wills, vice-president of the Brotherhood of Locomotive Engineers; Timothy Shea, acting president of the Brotherhood of Locomotive Firemen and Enginemen; L. E. Shepard, president of the Order of Railway Conductors and W. G. Lee, president of the Brotherhood of Railroad Trainmen.

The public group consists of 25 members, including 3 women; the employers' group includes 17, including 5 selected by the Chamber of Commerce of the United States, 3 by farmers' organizations, 2 by the Investment Bankers'

Association, 5 by the National Industrial Conference, and the 2 railroad executives appointed by the President. The organized labor group includes 15 chosen by Mr. Gompers and the 4 brotherhood representatives, but the representatives of the miners and the carpenters were not present. However, the public group includes several members who would naturally be classified in the other groups, ranging from E. H. Gary and J. D. Rockefeller, Jr., to John Spargo and C. E. Russell, socialists, while Mr. Jewell, representing 10 organizations of railway employees, is also a member of that group.

Thomas L. Chadbourne of New York, was elected chairman and Frank Morrison and John J. Raskob secretaries of the general committee. The chairmen of the groups were chosen as follows: Public, B. M. Baruch, of New York; employers, H. A. Wheeler, of Chicago; labor, Samuel Gompers, of Washington.

National Railroad Accident Prevention Drive

The safety supervisors of all the principal railroads are now actively engaged in preparations for the campaign, to be conducted for two weeks, October 18 to 31, to reduce the personal injury record. Marcus A. Dow, of the New York Central, is leader of a "safety squadron" which will conduct a 23-day campaign holding rallies in 23 cities on the lines of that company.

The British Railroad Strike

The strike of railroad employees in England, Scotland and Wales, was suddenly ended on Sunday afternoon, October 5, by an agreement between the Government and representatives of the employees' unions. It was agreed that work should be resumed immediately; that negotiations should be resumed and be completed before January 1; that wages should be stabilized at the present level until September 30, 1920, though at any time after August 1, next, they may be reviewed in the light of circumstances then existing; that no adult employee should receive less than 51 shillings a week while the cost of living is 110 per cent. above the pre-war level; strikers are to work harmoniously with those who had returned to work, or who had not struck; arrears of wages to be paid on resumption of work.

The last clause refers evidently to the fact that wages due to the employees on the pay day which occurred soon after the beginning of the strike were not paid.

Important Railway Club Meetings

Frank McManamy, assistant director, Division of Operation, United States Railroad Administration, will make an address on Shop Efficiency at the meeting of the New England Railroad Club at the American House, Boston, on Tuesday evening, October 14.

W. C. Kendall, manager, Car Service Section, Division of Operation, United States Railroad Administration, will make an address on the Utilization of Freight Car Equipment at the meeting of the New York Railroad Club, Engineering Societies Building, New York, on Friday evening October 17.

L. K. Silcox, master car builder, Chicago, Milwaukee & St. Paul, will make an address on Principles in Connection with the Economics of Freight Car Maintenance and Operation, at the meeting of the Western Railway Club, to be held at the Hotel Sherman, Chicago, Monday evening, October 20.

Railway Financial News

Eugene Davis, Eureka, Nev., has purchased the Eureka Nevada from Mrs. Whitelaw Reid and Ogden Mills, of New York, and George Whittell, of San Francisco, for approxi-

mately \$1,000,000; the road runs between Palisade, Nev., and Eureka, 84 miles.

The Chicago, Rock Island & Pacific has sold to the Central Union Trust Company and the National Bank of Commerce, New York, \$5,500,000 one-year, six per cent. collateral trust notes, secured by its first and refunding bonds.

The Sacramento Northern has applied to the California State Railroad Commission for an order authorizing capital expenditures to the extent of \$436,380, and for an authority to apply to that amount funds in the hands of the company received from the sale of bonds.

Railway Construction

The Central Texas Electric Company has been incorporated with \$500,000 capital; the principal office is to be at Temple, Tex., and the road is to build about 70 miles of interurban electric lines between Temple and Waco, and Temple and Marlin.

The Erie Railroad has given a contract to the Arthur McMullen Company, New York, for building the sub-structure of a bascule bridge over the Passaic river at Newark, N. J.; bids will be asked for in the near future for the steel work of the superstructure.

The Cleveland, Cincinnati, Chicago & St. Louis has awarded a contract to the Walsh Construction Company, Davenport, Iowa, for building a second track on its lines between Ansonia, Ohio, and Houston; the work involves realignment and grade reduction, 50,000 cu. yd. of grading per mile and the construction of 11 concrete bridges.

Official Changes

Brigadier General William W. Atterbury has resumed his former position as vice-president in charge of operation of the Pennsylvania Eastern Lines, with headquarters at Philadelphia.

Charles Donnelly, general solicitor of the Northern Pacific, has been appointed executive vice-president, with headquarters at St. Paul, Minn., succeeding Thomas Cooper, who has been granted leave of absence.

Wilbur C. Fisk, president of the Hudson & Manhattan, has been elected chairman of the board. Oren Root, vice-president, has succeeded Mr. Fisk as president.

W. G. Curren has been appointed general superintendent of transportation of the Baltimore & Ohio, with headquarters at Baltimore, Md.

J. K. Savage, assistant general superintendent of the Canadian Pacific, Eastern Lines, has been appointed acting general superintendent.

H. G. Griffin, manager of the National Bridge Company, Montreal, Quebec, has resigned to become general superintendent of the car department of Morris & Co., Chicago.

A. J. Devlin has been appointed master mechanic of the St. Louis-San Francisco Western division, with headquarters at Enid, Okla.

W. E. Harmison, master mechanic of the Erie with office at Kent, Ohio, has been appointed shop superintendent at Galion, Ohio.

Frederick H. Murray has been appointed master mechanic, Erie Railroad, New York division, with headquarters at Jersey City.

C. E. Perkins, freight traffic manager of the Missouri Pacific, has been appointed general traffic manager, with office at St. Louis; this position has been newly created.

W. A. Rambach, assistant freight traffic manager of the Missouri Pacific, has been appointed freight traffic manager of that road, with headquarters at St. Louis, Mo.

H. S. Clarke has been appointed division engineer of the Pennsylvania division of the Delaware & Hudson with headquarters at Carbondale, Pa.

J. D. Irving, assistant engineer of the Chicago & North

Western, has been promoted to division engineer of the Madison division with headquarters at South Pekin, Ill.

J. C. Wrenshall, Jr., has returned to the position of division engineer of the Philadelphia & Reading at Spring Garden St., Philadelphia.

Obituary

Walter H. Graves, formerly chief engineer of the Oregon Short Line and president of the Oregon Society of Civil Engineers, died suddenly at Salinas, Cal., September 26.

William R. Hudson, general manager of the Atlanta, Birmingham & Atlantic, Charleston & Western Carolina, Augusta & Summerville, Atlanta & West Point, Western Railroad of Alabama, Georgia Railroad, Augusta Union Station, Atlanta Terminal and Augusta Belt, with headquarters at Augusta, Ga., died September 25.

Lewis S. Smith, federal treasurer of the Texas & Pacific, died October 1 at his old home in Franklin, La.

Supply Trade News

Horace S. Wilkinson, of Syracuse, N. Y., has been elected chairman of the Crucible Steel Company of America, Pittsburgh, Pa., to succeed Herbert Du Puy, resigned.

H. H. Gilbert, assistant manager of sales at Chicago of the Pressed Steel Car Company and the Western Steel Car & Foundry Company, has been promoted to manager of sales, succeeding J. H. Mitchell, assigned to other duties.

Harry M. Giles has been appointed general superintendent of the South Philadelphia Works of the Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., succeeding the late Oscar Otto.

A. C. Allshul, in charge of the Milwaukee, Wis., district office of Joseph T. Ryerson & Son, Chicago, has been appointed branch manager of its new warehouse plant at Buffalo, N. Y.

Lieut. Vernon S. Henry, who served prior to the war in an engineering capacity with the Safety Car Heating & Lighting Company, New York, has re-entered the service of that company and is now connected with the Philadelphia office as sales representative.

The Bucyrus Company, South Milwaukee, Wis., has moved its southern sales office from New Orleans, La., to Birmingham, Ala., room 212, Jefferson County Bank Building.

The American Brake Company, St. Louis, Mo., is planning on erecting a four-story machine shop, at an estimated cost of \$225,000.

L. A. Muttart, railroad salesman for the Western Electric Company, Inc., Chicago, with headquarters in that city, has been promoted to manager of the Chicago railroad sales department of that company.

E. L. Chollman, formerly with the Southern Locomotive Valve Gear Company, has been made vice-president and sales manager of the Paxton-Mitchell Company, Omaha, Neb.

T. W. Holt, assistant general manager of the Curtain Supply Company, Chicago, has been elected a director and secretary, in place of William S. Estell, resigned.

Charles H. Small and George F. Shade have established an office in the Monadnock Building, San Francisco, Cal., as agents for the Sargent Company, Chicago, auxiliary locomotive device manufacturers. They will also act as agents for other manufacturers of railway specialties.

The statement in the *Emergency Bulletin* for October 6, that the United States Railroad Administration has placed an order for 200,000 tons of steel rails is incorrect. The Railroad Administration has been giving consideration to such an order for several weeks but has not yet placed an order.

Locomotives Ordered

The Imperial Karafuta Government (Japan) has ordered two Prairie type locomotives from the American Locomotive Company.

The Cordoba Central Railway (Argentina) has ordered six Mikado type locomotives from the American Locomotive Company.

Mora & Mendoza (Cuba) has ordered one four-wheel switching locomotive from the American Locomotive Company.

The Trinidad Government Railways have ordered three freight and three switching locomotives from the American Locomotive Company.

The Jamaica Government Railway has ordered three locomotives from the Baldwin Locomotive Works.

Freight Car Inquiries

The Skinner Packing Company, Omaha, Neb., is inquiring for 100 refrigerator cars.

Mitsui & Co., Chicago, exporters to Japan, are inquiring for 500 freight car trucks for export.

Perin & Marshall, 2 Rector street, New York, are inquiring for eighty 50-ton freight cars; these will include 50 flat cars, 20 coke and 10 self-dumping gondolas, some of which are for export to India.

The Belgian State Railways are inquiring for 2,000 twenty metric ton gondola cars.

The Peking Sui Yuan Railway, China, is inquiring for five hundred 40-ton gondola cars.

The Pennsylvania Lines West are inquiring for 200 cab-car underframes, and for options on an additional 250.

Freight Cars Ordered

The Atlantic Coast Line has ordered one hundred 50-ton phosphate cars from the Standard Steel Car Company.

The Pennsylvania Coal Company, New York City, has ordered 25 mine cars from the American Car & Foundry Company.

The Jamaica Government Railway has ordered 12 flat and 30 cane cars from the Magor Car Corporation.

The Cuban Central has ordered 50 narrow gage 15-ton cane cars from the Gregg Company.

The United Fruit Company has ordered for its railway lines in Cuba four 5,000-gal. tank cars and four 8,000-gal. tank cars from the Pennsylvania Tank Car Company.

The Tela Railroad, Honduras, has ordered through the United Fruit Company, fifty 30-ton fruit cars from the Magor Car Corporation.

The Trinidad Government Railways has ordered 70 cane cars from the Magor Car Corporation.

The Sterling Oil & Refining Company, Wichita, Kan., has ordered twenty-five 40-ton tank cars from the American Car & Foundry Company.

The Acme Petroleum Company, Chicago, has ordered ten 8,000-gal. and ten 10,000-gal. tank cars from the General American Tank Car Company, East Chicago, Indiana.

Passenger Car Inquiries

The Atlantic Coast Line is inquiring for four dining cars.

Passenger Car Orders

The United Railways of Havana have ordered eight first-class and six third-class passenger cars from the Wason Manufacturing Company, and six baggage cars from the Osgood-Bradley Car Company.

The Cuban Central has ordered six third-class passenger cars from the Wason Manufacturing Company and six baggage cars from the Osgood-Bradley Car Company.

The Cuba Railroad has ordered six passenger cars from the Pullman Company.

The Atlantic Coast Line has ordered four six-wheel dining cars from the Pullman Company.

Railway Age

EMERGENCY BULLETIN

PUBLISHED BY THE SIMMONS-BOARDMAN PUBLISHING COMPANY
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October 20, 1919.

The labor situation in the printing industry of New York City is still such that we are unable to publish the RAILWAY AGE. This is the third Emergency Bulletin which has been sent out since the RAILWAY AGE of September 28 was published. For convenient reference and in order to provide for the binding and indexing of the Bulletin with the regular issues, we have allowed page numbers for the two previous Bulletins and are numbering the pages of this one. Preserve your Bulletins in order to keep your files complete.

Baseless Charges Regarding Railroad Capitalization

One of the most remarkable hallucinations about business which ever obsessed the minds of any intelligent people is the hallucination of probably a majority of the people of the United States that the railways of this country as a whole are enormously overcapitalized. That some railways have been greatly overcapitalized everybody knows, and from this the conclusion has been drawn that all railroads are overcapitalized. The facts that there are numerous important roads, such as the Pennsylvania, the Burlington, the Lackawanna and the Santa Fe, which it is possible to demonstrate are, measured by any standard, greatly undercapitalized, and that not a few railroads which have been overcapitalized such as the Rock Island, have reduced their capitalization to a normal basis, do not seem to be known to many people.

The railroad labor brotherhoods within recent years, in order to array public opinion against private management of railroads, have carried on a widespread propaganda on the subject of overcapitalization, the obvious purpose being to convince the public that it is the return paid upon watered capitalization, and not the increased wages of labor, which is making necessary advances in railway rates.

The *Railway Age* repeatedly has exposed the fallacy, and even the falsehood, of many of the charges made. Glenn E. Plumb, on behalf of the labor brotherhoods, recently made a sweeping and indiscriminate attack upon the financial management of American railroads and demanded that his charges should be investigated before the roads were returned to private operation. The *Railway Age* showed that in the period to which he referred—that from 1900 to 1919—the operating income of the railway companies had increased only 98 per cent while the wages of the employees had increased 391 per cent. Doubtless this is the reason why when Mr. Plumb and Warren S. Stone recently appeared before the House Committee on Interstate Commerce to urge again the investigation of Mr. Plumb's charges, they complained to the House Committee that the *Railway Age* had been "abusing" the railway labor organizations and based upon this alleged "abuse" the allegation that the railway companies are trying to prevent investigation of their charges.

The *Railway Age* hopes that Congress will order an investigation of their charges. An investigation would be

beneficial to all concerned, and especially the railway companies.

The principal charge the spokesmen of the brotherhoods are now making is that the railways are overcapitalized, and that their book cost of road and equipment account is padded to the extent of \$8,000,000,000 to \$10,000,000,000. The book cost of road and equipment is larger than the net capitalization and therefore we will examine this charge as applied to it.

In the year 1916, the latest for which complete statistics are available, the total book cost of road and equipment as reported by the railroads to the Interstate Commerce Commission, was \$17,525,576,908. Prior to 1907 this account on many roads undoubtedly was made higher or lower than the actual investment, since the companies up to that time kept their accounts as each thought best. Since 1907, however, the companies have kept their accounts as required by the Interstate Commerce Commission and therefore it must be assumed that all additions made to the book cost of road and equipment since 1907 represent actual investment. The increase in book cost of road and equipment between 1907 and 1916 was \$4,495,232,580. Meantime the increase in the railroad mileage of the country was 24,299 miles.

Let us now go back to 1907. We find that at that time the total book cost of road and equipment was reported as \$13,030,344,328. The number of miles of railroad in the country was 229,951. If, as is alleged, the book cost has been padded to the extent of \$8,000,000,000 to \$10,000,000,000, all this padding was prior to the end of the fiscal year 1907. If we assume that the padding up to 1907 was, as alleged, \$8,000,000,000 to \$10,000,000,000, then we must conclude that up to that time the railway companies had built approximately 230,000 miles of railroad for from \$3,000,000,000 to \$5,000,000,000. If we assume that the "watering" amounted to only \$8,000,000,000, we are obliged to conclude that the companies had built 230,000 miles of railroads for \$5,030,000,000, or an average of less than \$22,000 per mile.

The railroads of the United States in 1907 were good railroads, many of them with double or more tracks. Never in any country in the world was even a good single track railroad built and equipped for \$22,000 a mile, or for any amount approaching this sum. In 1907 the cost of construction of the Government owned and operated railways of New South Wales and Australia, was reported as \$60,000 a mile; the cost of construction of the government-owned Intercolonial Railway of Canada was officially given as \$60,163 a mile; and the cost of construction of the government-owned railways of Germany, where the wages paid were half those paid in this country, was reported as over \$107,000 a mile.

The charge that the railways of the country are overcapitalized to the extent of \$8,000,000,000 to \$10,000,000,000, or any other large sum, seems so absolutely preposterous to anybody who has a scintilla of knowledge regarding railroad matters as not to be worth a moment's notice and yet these outrageous charges regarding overcapitalization must be

answered again and again because, while as applied to the railways as a whole they have not the slightest foundation, they are made with such confidence and repeated so often that many people are led to believe them.

We should greatly regret to see the return of the railroads to private operation delayed in order that a Congressional committee might investigate a charge known to be false by everybody who knows anything about the railroad business. At the same time, we should like to see a thorough investigation and complete report upon the subject of railroad capitalization in the United States made by some such committee as the present House Committee on Interstate and Foreign Commerce. Such an investigation and report would demonstrate the baselessness of the charge of great overcapitalization and thereby do more than almost anything else could do to put the railway companies in good standing before the American public.

Railroads Will Be Returned January 1

Regardless of any congressional action which may or may not be taken before January 1, 1920, the railroads will be handed back to their owners December 31 by the Railroad Administration, according to a statement by Director General Hines at a conference of the officers of the Central, Western, Southwestern and Northwestern regions in Chicago, October 16. The director general said there has been no qualification whatever of the President's announcement made in a message to Congress last May that the railroads will be handed back to owners at the end of this year. The Railroad Administration is making all its plans to this effect, with the view of making the transfer back to private management at that date with the least possible disturbance to public service.

Regarding questions as to maintenance of railroads during federal control, and whether they will be in proper physical condition when turned back, Mr. Hines' judgement is that at December 31, the physical condition of the property will compare favorably with conditions when properties were taken over on December 31, 1917, and this is what the government's obligation contemplates. On some particular railroads it may turn out that less maintenance of a particular sort has been done, this being due to inability to get material during the war, but he believes that this will be more than offset by maintenance of other character which has been done, so that it is a fair general statement to say that the government will turn back the railroads in the condition required by the contract. In specific instances, there may have to be readjustment, some involving payments to the government, some involving payments by government.

Senate Railroad Bill Nearly Completed

The Senate committee on interstate commerce were engaged last week in putting the finishing touches on amendments to the Cummins railroad bill as drafted by its subcommittee and introduced in the Senate by Senator Cummins. At a meeting on Tuesday the committee reached an agreement by vote of 10 to 5 on a provision requiring the Interstate Commerce Commission to make rates which will produce a net operating income equal to an average of 5½ per cent on the value of the property of the railroads in a rate-making group, authorizing the commission to add ½ of 1 per cent to take care of non-productive improvements, and providing for a distribution of the excess.

Because of the objections of the labor leaders to any plan of profit-sharing, the committee has abandoned the profit-sharing provision contained in the original Cummins bill, but it has declined to be influenced by their objections to anti-strike legislation and by a vote of 14 to 1 the committee decided to report some such provision.

A provision tentatively agreed upon, authorizing the Interstate Commerce Commission to sustain state rates during the readjustment period was reconsidered and action on it postponed. The provision in the original Cummins bill for an absolute long and short haul clause has been stricken out of the bill. At a meeting on Wednesday the committee gave consideration to the method of providing for the indebtedness of the railroads to the government, but took no action, and Chairman Cummins and Senator Kellogg were appointed a sub-committee to consider the plans proposed by the Railroad Administration and the railroad companies. It was roughly estimated before the committee that the government advances to the railroads for capital expenditures would amount to approximately \$1,200,000,000 and other advances might bring the total up to \$1,500,000,000. The railroads have asked that indebtedness for capital expenditures be funded for a period of years, while the Railroad Administration wants to offset as large a portion of it as possible by the indebtedness of the government to the railroads on account of rental.

The Railway Executives and Higher Freight Rates

The Association of Railway Executives has written to Director General Hines that the Association is of the opinion that since higher rates are made necessary because of the increases made in expenses by the government, it is the duty of the government to itself make the necessary increases in rates. The Association therefore asks the director general to meet a committee to discuss the situation.

The committee appointed to confer with the director general is as follows: T. DeWitt Cuyler, Alfred P. Thom, J. H. Hustis, Howard Elliott, Samuel Rea, A. H. Smith, Daniel Willard, E. E. Loomis, S. M. Felton, C. H. Markham, Carl H. Gray, R. M. Calkins, E. N. Brown, Henry Walters, Julius Kruttschnitt and Bird M. Robinson, president of the American Short Line Railroad Association.

Cross Ties for Next Year

The question of the procedure to be adopted in making purchases of ties and other railroad materials and supplies which will be needed by the railroads next year and which it is necessary to order several months in advance, is still under consideration by the Railroad Administration. The question is particularly acute in the case of cross-ties which must be ordered before the close of the year if an adequate supply is to be available for next year. This was considered at a meeting of the chairmen of the regional purchasing committees with officers of the Division of Purchases at Washington, but no decision was reached as to whether the Railroad Administration should place orders in the usual course and transfer the contracts to the railroads after the return to private management or whether the corporations should be asked to make their own purchases for next year in the same way that Director General Hines has suggested that they make their own arrangements, with the assistance of the Railroad Administration, for proposing such general advance in freight rates as they considered necessary.

Disastrous Strikes at New York City

The strike of longshoremen at New York City, reported in the Emergency Bulletin of last week, remains unsettled; though a considerable proportion of the men have returned to work, and the strength of the strike seems to be broken. The delays to ocean traffic have been very serious.

Since Monday the 13th, the business of the American Railway Express Company has been almost completely paralyzed in New York City, Jersey City and Hoboken,

by a strike of about 7,000 teamsters and helpers, the strike spreading on Wednesday to a number of suburban cities. The express company, like the railroads, succeeded in saving much perishable freight by diversion. The express strikers say that the United States Railroad Administration has been unreasonably slow in considering their claim for increases in pay; but the director general has written a letter explaining the impossibility of dealing promptly with all of the multitude of wage questions which come before the Board at Washington.

Strike at Altoona

A strike of engine house shopmen of the Pennsylvania Railroad at Enginehouse No. 3, Altoona, Pa., on Wednesday, October 8, spread on the 10th to the large shops, and by Friday night there was an almost complete stoppage of work, about 20,000 men having left their places; but by the following Monday the men had listened to the admonition of the director general of railroads, and his message that no grievances could be considered while the men were out, and they returned to work. The strike was started because an assistant foreman had been transferred from Hollidaysburg to Altoona in disregard, as claimed, of the seniority rule. The three engine-houses at Altoona employ about 1,900 men. The railroad company brought about 200 men from other shops, chiefly foremen, bosses and inspectors, and succeeded in keeping passenger trains running without interruption. The movement of freight was also kept up with a fair degree of success, although employees at Juniata, Hollidaysburg, Bellwood and Tyrone joined in the strike. This is said to be the first serious strike that has occurred at Altoona in forty-two years.

The Society of Railway Financial Officers

The Society of Railway Financial Officers held its annual meeting at the Waldorf Astoria, New York, on October 15, 16 and 17. On Wednesday afternoon, the question of what constitutes a good and sufficient reason for refunding payments on account of Liberty Loan subscriptions was introduced by H. R. Wheeler, federal treasurer of the Boston & Maine. The amount of bonds which are being taken by the railroad company either because the employee subscribing for them left the service or got into financial difficulties because of sickness or death in the family, varied from four per cent of the total amount subscribed for by employees of the company to nine per cent, with some instances of an even greater percentage. This means that when the roads are returned to their owners, the question of what shall be done with these bonds subscribed for at par by the Railroad Administration, and now selling below par, will have to be settled.

J. H. Ellis, federal treasurer of the Louisville & Nashville, introduced a discussion of the delivery of "order notify" shipments without the surrender of the bill of lading. It was generally agreed that General Order No. 25 of the Railroad Administration worked out unsatisfactorily and defeated the purpose of this kind of bill of lading and shipment since it prevented the consignor from getting payment on or before delivery of the goods to the consignee. It was suggested that if a bond were required upon the deposit of which a new bill of lading could be issued and deposited with the consignor's bank for collection, the difficulty would be overcome.

Industrial Conference

J. J. Forrester, president of the Brotherhood of Railway and Steamship Clerks, has been substituted as a member of the public group for Bert M. Jewell, acting president of the

Railroad Employees' Department of the American Federation of Labor.

General News

The American Railroad Association will hold its regular meeting at the Blackstone, Chicago, on Wednesday, November 19.

The American Railway Bridge & Building Association will hold its annual convention at Cleveland, Ohio, on October 21, 22 and 23.

The National Industrial Traffic League will hold its annual meeting at Hotel Sherman, Chicago, on November 12, 13 and 14.

The Senate on October 14 adopted and sent to the House the Kellogg resolution postponing until July 1, 1920, the effective date of Section 10 of the Clayton Anti-Trust law requiring railroads to obtain competitive bids on purchases and other transactions with companies in which they have an interlocking interest.

The International Order of Railway Yardmasters has submitted a petition to Director General Hines, asking that yardmasters be given the benefit of several provisions of wage orders which have been allowed for employees, such as an eight-hour day and extra pay for overtime. They also ask more exact classification of grades of employees.

To study the expedition of the movement of freight cars, both loaded and empty, within terminals in order to overcome avoidable delays and thus increase the efficiency of the freight car equipment of the country, special terminal committees have been arranged for by the Railroad Administration at 70 of the principal terminals of the nation, each to be composed of local railroad representatives and a representative of shippers.

The question of supply of railroad fuel in the event of the coal strike which is threatened for November 1 has been considered by the Division of Purchases. It is understood that most of the railroads have not a reserve supply which would protect them for many days and that they were urged to do as much as possible in the way of accumulating a reserve without engaging in competitive bidding against each other for the available supply of free coal.

Early in the present year the Railroad Administration issued instructions that cars be loaded in the direction of home with a view to getting cars re-located on home lines to a larger extent. The conclusion has been reached that this policy will still further be aided by re-establishing the per diem rules whereby one railroad is required to account for per diem on cars used by it belonging to another railroad. A general order making this requirement has therefore been issued.

Hearings were held week before last at Washington before the Board of Wages and Working Conditions on the demands for increased wages presented to the Railroad Administration in August by the Brotherhood of Locomotive Firemen and Enginemen. Timothy Shea, acting president of the brotherhood, made the opening statement for the organization and was followed by other officers of the brotherhood, while the railroads were represented by a committee of operating officers appointed by the regional directors.

Official Changes

Ralph Budd, vice-president of the Great Northern Railway Co., has been elected president, succeeding Louis W. Hill who has resigned as president but retains office as chairman of the board of directors.

B. A. Wait, assistant engineer on the First Division of

the Chicago, Rock Island & Pacific with headquarters at Des Moines, Iowa, has been promoted to division engineer of the Cedar Rapids division with office at Cedar Rapids, Iowa, succeeding Garrett Davis, who has been assigned to other duties.

Obituary

Patrick Laden, district engineer on the Illinois Central, with office at Waterloo, Iowa, died at his home in Rockford, Ill., on October 13, following a stroke of apoplexy.

Supply Trade News

H. W. Ross has been elected vice-president of Templeton, Kenly & Co., Ltd., Chicago, manufacturers of Simplex jacks.

Mudge & Co., Chicago, has appointed the Canuck Supply Co., Montreal, Ont., as its Canadian sales agent.

The name of the Schroeder Headlight & Generating Co., Evansville, Ind., was changed to Sunbeam Electric Manufacturing Company on September 27, 1919.

James S. Hearons has become affiliated with the Gustin-Bacon Manufacturing Company, Kansas City, Mo., as railroad representative.

The Duncan Lumber Company, Portland, Ore., has been appointed the exclusive sales agent of the Luedinghaus Lumber Company, Dryad, Wash., and the Meskill Lumber Company, Meskill, Wash.

The T. Geo. Stiles Co., Arlington, N. J., designers and manufacturers of railroad signals, interlocking and third rail safety appliances and supplies, has appointed the C. H. Whall Co., 170 Summer Street, Boston, Mass., sales agents for its materials, in territory covering all railroads in the New England States.

K. C. Gardner, assistant manager of sales of the Pressed Steel Car Company and the Western Steel & Foundry Company, has been appointed manager of sales of the Central district with office at Pittsburgh, Pa., and Huntley H. Gilbert, assistant manager of sales, has been appointed manager of sales of the Western district with office at Chicago, vice J. H. Mitchell, assigned to other duties.

Extensions are contemplated by the Lima Locomotive Works, Lima, Ohio, which will increase the plant's capacity approximately 50 per cent and involve an expenditure of \$1,250,000. Additions to the present plant include a new erecting shop with a capacity of 70 locomotives a month, and a superheater shop extension for the boiler and tank works. New machinery costing approximately \$300,000 will be purchased.

Railway Construction

The Chicago & Alton has begun work on the second unit of a two-unit freight house at Chicago. The new building will be of steel construction, 165 feet by 460 feet.

The Chicago, Rock Island & Pacific will receive bids up to October 22 for the construction of a double track bridge across the Des Moines river at Eldon, Iowa; the bridge will consist of eight 93-foot and one 46-foot concrete arch spans, and two 44-foot deck plate girders with concrete decks.

Freight and Passenger Car Inquiries

The Arms Palace Horse Car Co. is inquiring for 25 horse cars.

The Bell Locomotive Works, New York City, is inquiring for 45 narrow gage flat, coal and tank cars.

Clark & Hutcheson, 80 Wall Street, New York City, are inquiring for a number of electric storage battery steel cars for export to South America.

The Detroit United Railway, Detroit, Mich., is inquiring for 25 express trailer cars and three interurban bodies.

The Eastern Steel Company, Pottsville, Pa., is inquiring for 33 hopper cars and 5 gondola cars; all of 50-ton capacity.

The National Enameling & Stamping Company, Granite City, Ill., is inquiring for 5 all steel 50-ton gondola cars.

The New York, Chicago & St. Louis is inquiring for 11 passenger cars.

The Pacific Car & Foundry Co., Seattle, Wash., is inquiring for steel underframes for passenger cars.

The Peking Sui Yuan has increased to 1,000 its inquiry through Mitsui & Co., New York, for 500 40-ton high side gondola cars.

The Standard Supply & Equipment Co., Philadelphia, Pa., is inquiring for one self-acting dump car.

Cars Ordered

The Ashford Coal Co., Ashford, W. Va., has ordered 30 wooden mine cars from the American Car & Foundry Co.

The Chelsea Refining Co., Ardmore, Okla., has ordered 50 8000-gal. tank cars from the American Car & Foundry Co.

The Eagle Refining Co., Wichita Falls, Tex., has ordered 50 8050-gal. tank cars, from the Pennsylvania Tank Car Company.

The Foco Oil Company, Franklin, Pa., has ordered 10 8050-gal. tank cars from the Pennsylvania Tank Car Co.

The Freedom Oil Works, Freedom, Pa., has ordered 50 10050-gal. tank cars, from the Pennsylvania Tank Car Co.

The H. C. Frick Coke Co., Pittsburgh, Pa., has ordered 100 mine cars from the American Car & Foundry Co.

The Holland Coal Co., Altoona, Pa., has ordered 50 low-vein pit cars from the American Car & Foundry Co.

Holmes, Bulkley & Wardrop, 61 Broadway, New York, have ordered 100 8050-gal. tank cars, from the Pennsylvania Tank Car Co.

The Lubrite Refining Co., St. Louis, Mo., has ordered 50 10000-gal. tank cars from the American Car & Foundry Co.

The Magnolia Petroleum Co., Dallas, Tex., has ordered 100 40-ton, 8000-gal. tank cars from the American Car & Foundry Co.

The Manila Railroad Co., New York City, has ordered 25 first-class coaches from the American Car & Foundry Co., for export to the Philippine Islands.

F. M. Pease, Chicago, has ordered 20 8050-gal. tank cars from the Pennsylvania Tank Car Company.

The Ranger Refining Co., Kansas City, Mo., has ordered 25 8000-gal. and 25 10000-gal. tank cars from the American Car & Foundry Co., and 20 10050-gal. tank cars, from the Pennsylvania Tank Car Company.

The Transcontinental Oil Co., Pittsburgh, Pa., has ordered 50 8000-gal. tank cars from the American Car & Foundry Co.

The United States Industrial Alcohol Co., 27 William Street, New York, has ordered 124 8050-gal. tank cars, from the Pennsylvania Tank Car Company.

Locomotives Ordered

The South Manchurian Railways have ordered 12 0-8-0 type locomotives from the Baldwin Locomotive Works.

The Steel & Tube Company of America, Indiana Harbor, Ind., has ordered 2 0-6-0 type switching locomotives from the Baldwin Locomotive Works.

Remember the "National Railroad Accident Prevention Drive!" October 18 to 31.

Railway Age

EMERGENCY BULLETIN

PUBLISHED BY THE SIMMONS-BOARDMAN PUBLISHING COMPANY
WOOLWORTH BUILDING, NEW YORK

November 6, 1919

Cummins Bill Cannot Be Passed By Jan. 1

The Senate Committee on Interstate Commerce on Wednesday practically decided that it was impossible to pass comprehensive railroad legislation before the end of the year; it tentatively decided to substitute for the Cummins bill a brief resolution providing for the return of the roads, January 1, with temporary extension of the guaranty. Some conferences are to be held to determine just what terms can be enacted without opposition and the committee is to meet again Friday.

The Printers' Strike

No Emergency Bulletin was issued last week—this for reasons beyond our control. We expect to resume publication of the *Railway Age* in a few days.

Just a few words about the strike. The employing printers had entered into an agreement with the international unions of the printing trades to give the men a 44-hour week beginning May, 1921. The pressmen and feeders union in New York City, whose local agreement expired September 30 last, insisted on an increase of \$14 a week and also on the immediate adoption of the 44-hour week. The employing printers offered the men, who were already well paid, an increase of \$6 a week. The men refused this offer and went on a strike. Their international organization, which is affiliated with the American Federation of Labor, insisted on the men returning to work and finally revoked the charter of the union and classed the men as "outlaws."

The compositors officially remained at work, but actually went on a "vacation strike" in sympathy with the striking pressmen and feeders. As their local agreement had run out and contained no continuing clause the international organization has been unable to revoke their charter—no agreement having been broken—and has had to content itself with advising the men to return to work. The binders and mailers have signed an agreement with the employers.

The international organization of the pressmen and feeders is trying to get the men back into its organization, but is determined to rid itself of the radical element, which it classes as bolshevists. After five weeks of idleness the men are beginning to realize that they have been misled by their local officers and are gradually taking out new international cards and returning to work. A few employers gave in to the local pressmen and feeders' union, but other unions affiliated with the American Federation of Labor regard their output as "struck work" and are boycotting them.

For the first three weeks of the strike the publishers, to protect the employing printers, decided not to take their work out of the city, even temporarily. This encouraged the men who realized that they could recoup their losses after the strike by overtime work. Recently many publishers have left New York City, temporarily or perma-

nently, and periodicals are gradually coming out, most of them somewhat incomplete and unfinished because of lack of adequate facilities. These handicaps, it is expected, will shortly be overcome, if indeed the strike is not ended by a complete victory for the employers.

Enormous Increase of Travel—No Increase of Cars

The public is expecting that soon after the railways are returned to private operation there will be a great improvement of service and especially of passenger service. Doubtless there soon will be some improvement, but how difficult it is going to be and how long it is likely to take to make service as good as it was before government operation was adopted is indicated in a striking way by the statistics regarding the changes which have occurred in the amount of travel within recent years and in the number of cars which have been provided to carry passengers.

Between the years 1910 and 1916 the number of passenger cars in service increased from 47,095 to 54,774, or 16 per cent. Meantime, the increase in the number of passengers carried one mile, which is the measure of the total amount of travel, was 36 per cent.

After the United States entered the war in the spring of 1917 the railways, in order to enable them better to handle the country's war business, began sharply curtailing passenger service, and also in order to enable the manufacturing resources of the country to be devoted almost exclusively to war work they sharply curtailed the number of cars, including passenger cars, ordered. In 1917 the increase in the number of passenger cars in service was 1,167.

Government control was established at the beginning of 1918, and during that year the total passenger cars ordered for all the railroads was only 131, and in 1919 no substantial orders for passenger cars have been placed. In consequence, within the last two years there has been no increase in the number of passenger cars, and probably, owing to retirement of old cars, there has been some decrease.

Meantime there has been occurring an increase in the volume of passenger traffic which far surpasses all records ever made before. As already stated, the increase in travel in the six years from 1910 to 1916 was 36 per cent. In 1917 alone it was 14½ per cent. In 1918 the increase over 1917 exceeded 8 per cent. In the first eight months of 1919 the passenger business handled was 6.3 per cent greater than handled in the same months of 1918. These cumulative increases since 1916 aggregate 32 per cent.

The large increase in passenger traffic in 1917 and 1918 has been attributed chiefly to the movement of troops and to the traveling of their relatives and friends to and from the cantonments where they were located. Since 1918, however, there has been a very large reduction in the movement of troops, and yet the statistics of the Railroad Administration show that the amount of travel in July, 1919, was 12½ per cent greater than in July, 1918.

The relationship of passenger rates and this enormous increase of travel is very interesting. It always has been contended that reductions in passenger fares would increase travel, and that advances in passenger fares would reduce it. In June, 1918, passenger fares throughout most of the United States were increased 50 per cent. We do not know what was the increase in travel during the month immediately following, but we do know that within two months—that is, in August, 1918—the increase in travel over August, 1917, was almost 12 per cent; that in September, 1918, it was 14 per cent; and that the increase in travel has gone on ever since, the volume of it in July, 1919, being, as we have already shown, 12½ per cent greater than in July, 1918. In other words, the largest increase in travel which probably ever took place in so short a time occurred immediately after the 50 per cent increase in passenger fares; and the amount of travel has continued rapidly to increase ever since then. The explanation doubtless is that the working people of the country are being paid higher wages than ever before and that they are doing more traveling than ever before.

There is no present reason for doubting that the present large amount of travel will continue, and even increase. If the railroads during the last three years had bought only as many passenger cars per year as they did in the preceding six years they would have bought in this three years at least 7,000 more cars than they actually did. But the increase in passenger business in the last three years has been almost as great as in all of the preceding six years together. Taking into consideration both the very small number of passenger cars that has been bought during the last three years and the enormous increase in passenger business which has occurred, it is safe to say that the railroads after they are returned to private operation would have to have at least 8,000 and probably 10,000 more passenger cars than they actually will have in order to handle their passenger business in the same way that they handled it in 1916. But the largest number of passenger cars ever built in the United States and Canada together in one year was only 4,412. It is evident, therefore, that no matter how anxious the railways may be to give satisfactory service after the resumption of private operation it will take several years to make up for the deficiency of passenger cars which has accumulated during the last three years.

Cummins Bill Reported to Senate

The Cummins bill, providing for a reorganization of the system of railroad regulation and also for the gradual reorganization of the railroads into 20 to 35 competing systems, was reported to the Senate on October 23 in the form of a new bill, S. 3288, including the many important revisions which have been made by the Committee on Interstate Commerce since it was originally introduced on September 2 as the work of a subcommittee.

In submitting it to the Senate, Senator Cummins read his letter from Director General Hines urging early action on railroad legislation and also his reply to Mr. Hines stating his intention to do everything in his power to bring the bill forward for consideration by the Senate the moment it is free from the present involved subject of the peace treaty. He said that while there has been a movement in Congress for an early adjournment he intended to oppose it with all the influence he could command and that in his opinion two weeks of steady work ought to secure a final vote on the bill. He also stated to the Senate that he agreed with Mr. Hines that Congress ought to give its consideration to the bill to the exclusion of every other measure.

"I believe," he added, "that if the Senate were to adjourn before it has disposed of this question it would be subject

to the condemnation of every right-minded man in America, for there is nothing that would be so disastrous to the commerce of America as a long delay in establishing a policy respecting the return of these vast properties to their owners." He promised to present a report on the bill within a few days. Senator La Follette announced that he would file a minority report expressing his dissent from the provisions of the bill and at the appropriate time would also propose a substitute measure.

The revised bill is a vastly different bill from that tentatively drafted by the subcommittee, which was outlined in the *Railway Age* of September 5, page 448. It is based on no single plan of the many that have been proposed but probably bears a closer resemblance to that proposed by the National Transportation Conference than to any other, as that plan itself represented the selection of ideas from the principal plans previously proposed.

The most important change made by the committee was the adoption of the idea of establishing a definite percentage of return for the guidance of the Interstate Commerce Commission in rate-making, with a provision for a division of net operating income above 6 per cent but not for distribution to the so-called "weak roads." In 1925 and every fifth year thereafter, however, the commission may revise the percentage basis in accordance with conditions. To meet the constitutional and other objections to the idea of taking from a prosperous or efficient road directly for the benefit of its less fortunate or less deserving neighbors it is provided that the contributions made by roads having excess earnings shall go into a general railroad contingent fund to be administered by a federal transportation board for common railroad purposes, which includes the possibility of loans to roads that need assistance. The provisions in the original bill providing for the use of half the excess earnings for the benefit of the employes were omitted because of the objections made before the committee by labor leaders.

The provisions dealing with the method of funding the indebtedness of the railroads to the government, and those relating to the settlement of labor disputes, have been entirely rewritten; the regulation of security issues is transferred from the Interstate Commerce Commission to the proposed new transportation board, and there are new provisions relating to the co-ordination of rail and water traffic and to the powers of corporations incorporated under the act. The provisions relating to control of telegraph and telephone systems were omitted. The revised bill contains no provision giving the Interstate Commerce Commission power to suspend state rates during the transition period after federal control although at one time the committee tentatively approved such a plan.

Rules for Competitive Bidding

The Interstate Commerce Commission has issued regulations governing the method of obtaining competitive bids on transactions by a common carrier and companies which have "interlocking" relationships, as provided by Section 10 of the Clayton law, but it is expected that Congress will have extended the effective date of the law before the regulations become effective on January 1.

General News

The Railroad Administration has ordered 40,000 tons of rail from the Bethlehem Steel Company.

The annual meeting of the National Industrial Traffic League will be held at the Hotel Sherman, Chicago, Ill., on November 12, 13 and 14.

An extra storage charge of \$10 a car as an emergency measure, is now imposed on refrigerator cars not unloaded within five days; and on cars of lumber held for reconsignment, after two days. The National Bureau of Whole-

sale Lumber Distributors, has instructed its traffic committee, to seek a conference with Director General Hines to protest against this charge on emergency lumber.

Official Changes

Frank Hedley, vice-president and general manager of the Interborough Rapid Transit Company, New York, has been elected president of that company succeeding Theodore P. Shonts.

I. B. Tigrett, president of the Birmingham & Northwestern and the Meriden & Memphis, has been appointed president of the Gulf, Mobile & Northern with headquarters at Mobile, Ala., succeeding John W. Platten, resigned to become chairman of the board of directors. Mr. Tigrett will continue also as president of the two roads first mentioned.

LaRue Brown, assistant U. S. attorney general, has been appointed general solicitor of the Railroad Administration to fill the vacancy created by the recent appointment of E. Marvin Underwood as general counsel of the administration.

Benjamin B. Greer, assistant regional director of the Central Western region, has been appointed federal manager of the Chicago, Milwaukee & St. Paul, the Ontonagon and the Escanaba & Lake Superior, succeeding H. E. Byram, who has resigned to become president of the Chicago, Milwaukee & St. Paul Railroad Company, which office he held prior to his appointment under federal management.

C. R. Capps, traffic assistant at Philadelphia to Regional Director L. W. Baldwin, of the Allegheny region, has resigned to resume his former duties as senior vice-president of the Seaboard Air Line with headquarters at Norfolk, Va. William Hodgdon, traffic manager of the Pennsylvania, Western Lines, has been appointed Mr. Capps' successor.

F. E. Clarity, transportation assistant to the regional director of the Central Western region, has been promoted to assistant regional director succeeding B. B. Greer.

W. G. Curren has been appointed general superintendent of transportation of the Baltimore & Ohio, with headquarters at Baltimore, Md.

F. L. Johnson, general superintendent of the Missouri district of the Chicago, Burlington & Quincy, with headquarters at St. Louis, Mo., has been appointed assistant to the general manager, with office at Chicago, a newly-created position. M. L. Howard, assistant to the federal manager, with office at Chicago, has been appointed to succeed Mr. Johnson at St. Louis.

E. W. Hoffman, superintendent of the Ohio division of the Baltimore & Ohio, with office at Chillicothe, Ohio, has been transferred to the Chicago division, with office at Chicago, succeeding J. H. Jackson, who has resigned.

M. C. LaBertew, superintendent of the Great Northern, at Harve, Mont., has been transferred to the Kalispell division, succeeding J. L. Close, granted leave of absence; T. F. Dixon, trainmaster of the Great Northern at Great Falls, Mont., has been appointed acting division superintendent during the absence of Mr. LaBertew.

C. W. Crosby, trainmaster of the Piedmont & Northern at Greenville, S. C., has been promoted to superintendent in charge of the operating department with headquarters at Greenville, succeeding E. Thomson, general manager, who has resigned.

W. H. Oliver, division engineer on the Atchison, Topeka & Santa Fe, with headquarters at San Bernardino, Cal., has been promoted to engineer of the Grand division with headquarters at Los Angeles, Cal.

W. A. Wallace, division engineer on the Chicago, Rock Island & Pacific, at Eldon, Mo., has been transferred to

the Nebraska division, with headquarters at Fairbury, Nebr., a newly-created position.

W. H. Lowther, division engineer of the Idaho division of the Oregon Short Line, has been appointed division engineer of the Kansas division of the Union Pacific succeeding W. A. Parker, whose promotion was noted in the Emergency Bulletin of October 6.

W. Malthaner, general master mechanic of the Northwest district of the Baltimore & Ohio, Western Lines, with headquarters at Cleveland, Ohio, has been appointed acting superintendent maintenance of equipment with headquarters at Cincinnati, Ohio. W. G. Johnston, master mechanic of the Newark division with headquarters at Newark, Ohio, has been appointed Mr. Malthaner's successor and F. E. Cooper, shop superintendent at Newark, Ohio, has been appointed to succeed Mr. Johnston.

J. S. Jennings, division master mechanic on the Michigan Central at Bay City, Mich., has been promoted to assistant superintendent of motive power with headquarters at Detroit, Mich., a newly-created position. J. O. Goodwin, road foreman of engines with office at West Bay City, Mich., has been appointed to succeed Mr. Jennings at Bay City.

W. F. Kiesel, Jr., acting mechanical engineer of the Pennsylvania, at Altoona, Pa., has been appointed mechanical engineer succeeding A. S. Vogt, retired; H. A. Hoke has been appointed Mr. Kiesel's successor; R. N. Miller, assistant engineer at Altoona, has been appointed acting assistant mechanical engineer, succeeding Mr. Hoke, and B. S. Brown is Mr. Miller's successor. J. V. B. Duer, assistant engineer at Altoona, has been made electrical engineer, and S. M. Viele assistant electrical engineer of the new electrical engineering department operated in conjunction with the mechanical engineering department at Altoona.

S. A. Schickedanz, chief draftsman of the Chicago & Eastern Illinois, at Chicago, has been promoted to mechanical engineer, at Danville, Ill., succeeding W. H. Hauser, who has resigned to become connected with the A. B. C. Transit Refrigeration Company, Chicago.

J. C. Brekenfeld has been appointed shop supervisor of the St. Louis-San Francisco, with headquarters at Springfield, Mo., succeeding A. J. Devlin, whose transfer was noticed in the Emergency Bulletin of October 13.

S. Lenzner, master car builder of the Michigan Central with headquarters at Detroit, Mich., has been appointed supervisor of passenger equipment, a newly-created position.

Supply Trade Notes

J. H. Mitchell, manager of sales of the western district for the Pressed Steel Car Company and the Western Steel Car & Foundry Company, with headquarters in Chicago, left recently for Havana, Cuba, to assume the position of executive vice-president of the American Steel Company of Cuba.

S. C. Amsden, advertising manager of Mudge & Co., Chicago, with headquarters in that city, has been appointed district manager of the southwestern territory, with headquarters at St. Louis, Mo.

The American Automatic Train Control Corporation, American building, Baltimore, Md., which has been organized as the successor of the American Train Control Company, announces that it is preparing to push activities on a large scale, with its own factories. The president of the corporation is Calvin W. Hendrick, and the vice-president is Finley J. Shepard, New York City, vice-president of the Missouri Pacific Railroad Company. The other members of the board of directors are John B. Ramsay, Morris Whitridge, M. M. Elkan (New York); T. R. Thomas, L. A. Cover, W. J. Donnelly, R. L. Williams and S. H. Lauchheimer, all of Baltimore except Mr. Elkan.

C. W. Cross has been appointed manager of western railroad sales of the Chicago Pneumatic Tool Company, Chicago. Mr. Cross will have his headquarters in the Fisher building, Chicago.

The Ingersoll-Rand Company, New York, has established a branch office in the Sam Houston Life building, Dallas, Tex., in charge of R. H. Brown, Jr., as manager.

Jean K. Vanatta, service manager of Mudge & Co., Chicago, has been appointed district manager of the central territory with headquarters at Chicago.

The Railway Lock-Spike Company, Atlanta, Ga., has been chartered with \$300,000 capital and the privilege of increasing to \$1,000,000, to manufacture railway spikes and other railway supplies. H. E. Harris, W. E. Paschall and J. J. Casteel are the incorporators.

R. E. Trout has resigned as signal engineer of the St. Louis-San Francisco to become general sales manager of the primary battery division of Thomas A. Edison, Inc., with office at Bloomfield, N. J.

Locomotive Inquiries

The Hukuang Railway of China is inquiring for 25 locomotives.

The Pennsylvania Equipment Company, Philadelphia, Pa., is in the market for a second-hand, standard gage, four-wheel, saddle tank Baldwin or Porter locomotive, weighing not less than 10 tons, or more than 12 tons.

Locomotives Ordered

The Central Railway of Brazil has ordered five Consolidation locomotives from the American Locomotive Company. They will have 17-in. x 20-in. cylinders, with a total weight in working order of 93,000 lb.

The Chicago, Milwaukee & St. Paul is having repairs made to about 40 locomotives at the Baldwin Locomotive Works.

The Egyptian State Railways have ordered 50 locomotives from the Baldwin Locomotive Works. Thirty of these are of the 2-6-0 type and will have 21-in. cylinders, and 20 are of the 4-4-2 type, and will have 20-in. cylinders. The Egyptian State Railways are also said to be asking prices on 65 additional locomotives.

The United Fruit Company has ordered two Consolidation locomotives from the Baldwin Locomotive Works. They will have 17-in. by 24-in. cylinders, and are for use on its lines in Cuba.

The United Verde Copper Company, New York, has ordered two Mallet locomotives from the American Locomotive Company. They will have 23½ x 37 x 32-in. cylinders, and a total weight in working order of 448,000 lb.

Perin & Marshall, 2 Rector street, New York, have ordered five 2-6-4 type locomotives from the Baldwin Locomotive Works for the Mysore State Railways (India).

Freight Car Inquiries

The Famous Broadway Shows, Cincinnati, Ohio, is inquiring for five 60-ft. flat cars.

The Ford Motor Company, Detroit, Mich., is inquiring for fifty 50-ton flat cars and for twelve 50-ton high side, coke rack gondola cars.

Frazar & Company, 30 Church street, New York City, is inquiring for one 3-ft. gage freight motor car.

The International Railway Supply Company, New York, is inquiring for 100 low-side cane cars, for the Trinidad Government Railways. These cars are in addition to the 70 cane cars ordered recently by the International Railway Supply Company from the Magor Car Corporation for the same railroad.

The National Steel Car Company, Ltd., Hamilton, Ont., is estimating on 100 ten-ton drop side gondolas and 100

ten-ton box cars for the Morocco State Railways.

The Pennsylvania Equipment Company, Philadelphia, Pa., is in the market for eight second-hand steel underframe box cars, also for a second-hand well car.

Perin & Marshall, New York, are in the market for 40 all-steel ore hopper cars and 60 steel platform cars, 20 ft. long, for the Mysore State Railways (India).

The Tennessee Coal, Iron & Railroad Company is asking for prices on 30 coke cars of 70-ton capacity.

A. C. Torbert, Chicago, is inquiring for 50 gondola cars.

The United States War Department is asking for prices on 500 tank cars of 10,000 gal. capacity.

Freight Car Orders

The Brimstone Railroad & Canals Company, Sulphur, La., has ordered 25 hopper cars from the Pressed Steel Car Company, Pittsburgh, Pa.

The Cuyamel Fruit Company, New Orleans, La., has ordered 15 fruit cars from the Magor Car Corporation, for export to Honduras.

F. M. Pease, Chicago, has ordered thirty-five 8,050-gal. tank cars from the Pennsylvania Tank Car Company. This is in addition to the 20 cars recently ordered from the same company.

The Pekin-Suiyuan has ordered 100 forty-ton gondola cars from the General American Tank Car Company, and it is understood has given the same company an additional order for 500-forty-ton high side gondola cars.

Then Penn Coal & Coke Corporation, Cresson, Pa., has ordered 75 wood and 100 steel and wood mine cars from the American Car & Foundry Co.

The United Railways of Havana reported in the *Railway Age* of September 26, as inquiring for twenty-five 40-ton hopper ballast cars, have ordered this equipment from the Standard Steel Car Company.

The Wabash Railroad is having repairs made by the Pressed Steel Car Company to 300 of its wooden freight cars.

Passenger Car Inquiries

The Crownshield Trading Corp., 30 Church street, New York City, is inquiring for two passenger cars, one first and second class and one second class.

Dodwell & Company, 161 Water street, New York City, are inquiring for one kerosene motor coach for export to China.

Jardine, Matheson & Co., Ltd., New York City, are inquiring for two passenger coaches.

The Long Island Railroad is inquiring for 50 trailer cars, 30 steam coaches, and 20 motor cars, all to be 54 feet long.

C. E. Morfoot, Starkville, Miss., is inquiring for one combination sleeping and baggage car.

The Nashville, Chattanooga & St. Louis is inquiring for four 70-ft. coaches and for two 70-ft. partition coaches.

The Penn General Supply Company, Pittsburgh, Pa., is inquiring for from 30 to 40 steel railway velocipedes.

Perin & Marshall, 2 Rector street, New York, are in the market for steel underframes and trucks for five passenger cars and five baggage cars.

Ricardo, Gomez & Dietlin Co., 161 Maiden Lane, New York, is inquiring for 80 tramway chasses, for export to Italy.

The Stephenville & Desdemona Oil Railway Company, Stephenville, Tex., is inquiring for five narrow-gage wooden passenger cars.

The Texas & Pacific is inquiring for 69 miscellaneous passenger cars, including 50 coaches, 5 diners, 12 baggage and express and 2 mail cars.

The United Railways of Havana are in the market for three sleeping cars.

EDITORIAL

Railway Age

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Another Apology

FOR SEVEN WEEKS, since September 26, publication of the *Railway Age* has been delayed because of the strike of feeders and pressmen in New York City. The situation was fully outlined in our Emergency Bulletin for November 6.

The delayed issues will be published as rapidly as possible; the news articles in each issue will, however, be strictly up to date. While each number will bear the date of the delayed issue, it will be coupled with the actual date of publication in order that there may be no confusion in referring to the papers in the future. This method of handling is necessary because the railroads of this country are now passing through the most critical period in their entire history, and it is necessary to keep our readers fully and promptly informed as to the course of events.

Since September 26, the date of the previous issue, we have found it possible to publish four Emergency Bulletins which have briefly covered some of the more important developments and news items. These were dated as of the day of mailing and were allowed—and in the case of the last two bulletins actually carried—page numbers, so that they will be indexed and may be bound with the current volume.

We wish to take this opportunity of thanking both our subscribers and advertisers for the cordial and hearty support they have given to us in the emergency.

Libraries and those wishing to bind their numbers of the *Railway Age* to keep complete files, should preserve the Emergency Bulletins.

For the first time the railroads of this country have entered into a national agreement with the shop crafts. While the

The Shop Craft Agreement

statement has been made that the increases in wages granted are insignificant and are only such as to bring the rates for the shopmen up to a basis comparable to that of other railroad employees, this is hardly borne out by a close study of the agreement. For instance, the rates of pay for mechanics who have been receiving 68 cents an hour have been increased 4 cents an hour, effective May 1, 1919; steel car workers and other mechanics in the car department who have been receiving 63 cents an hour have also been increased 4 cents an hour; while other mechanics in the car department who were receiving 58 cents an hour have been increased 9 cents, all these changes being effective May 1, 1919. Apprentices, helpers, and other classes of workers, except certain ones covered in a special rule, also received an increase of 4 cents an hour effective May 1, 1919. These increases may, to some, seem insignificant compared with the high rates which the men have been receiving, but they promise to make a very considerable addition to the expenses of the individ-

ual roads. One peculiar weakness in railroad organization is indicated by rule 34 of the agreement, which reads: "Should an employee be assigned temporarily to fill the place of a foreman he will be paid his own rate, straight time for straight time hours, and overtime for overtime hours, if greater than the foreman's rate. If it is not he will get the foreman's rate." If the former condition is true how much will the workman who is acting temporarily as foreman look up to or respect his immediate superior when he returns to his job as a mechanic? The foreman coming into intimate contact with the workmen should surely be placed on a much higher plane than this if the management expects real results. This shortcoming is not a development which has come about under federal control, although it may have been intensified by it. It is a "hangover" from pre-war days. One great weakness of American railroads is the lack of adequate supervision. The roads must invest their officers and foremen with real dignity and importance if the efficiency and effectiveness of the various departments are to be improved.

Restricted production directly increases the cost of living. The *Railway Age* has pointed this out time and time again during recent months. A keen observer, thoroughly familiar with railroad mechanical departments and their practices and who has made several trips over the country in recent years,

The High Cost of Living

says that he was astounded, on a recent trip, to note the idleness on the part of railroad shop men, and their apparent lack of interest in their work. Tourists returning from their summer vacations tell of inattention, brusqueness and indifference on the part of station employees with whom they came in contact in buying tickets and in checking baggage. A professional man in a city which is largely made up of railroad employees (it has a large locomotive and car repair shop and terminal yards) tells of surprising extravagances on the part of railroad men. The habits of thrift which they cultivated in pre-war days have been succeeded by the most thoughtless and careless expenditures. These are not isolated instances; unfortunately they are too general. If this country is to take its real place among the nations of the world; if its citizens are to enjoy prosperity and comfort, these disturbing conditions which exist throughout our industries and railroads must be corrected. The coming winter promises distress and even suffering among the poor and less favored classes, and this not because of any failure in our natural resources, but largely because of restricted production at a time when the need was never so great, coupled with a spirit of extravagance. Fortunately, people are gradually awakening to the fact that those who hamper or restrict production are just as guilty as the profiteer. If this feeling on the part of the public can inspire the Administration or Congress to conduct a spirited campaign of education in economics relating to labor, production, money, wealth, etc., it will be most helpful. This will be particularly true if at the same time the labor leaders and the radical element in the ranks of labor will awaken to the fact that the public is sick and tired of strikes and threats of strikes and is in a mood no longer to tolerate restricted production.